

**THE SYNTAX OF ARMENIAN:
CHAINS AND THE AUXILIARY**

Armine' Tamrazian

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ABSTRACT

The purpose of this thesis is to provide an analysis for the behaviour of the auxiliary verb in Focussed, Interrogative, Indefinite and Negative structures in Armenian.

In chapter 1, a brief introduction is given to the properties of the language in general including word order, island effects and the data concerning auxiliary "movement".

The auxiliary in Armenian always follows the focussed or Wh-Phrase. Negation and indefinites also trigger auxiliary movement in this language. In declaratives the auxiliary follows the verb. On the other hand there is evidence to show that elements which are followed by the auxiliary are in situ. The question that arises here is how can the auxiliary appear on these elements if they are in situ? The answer to this question is given in the next chapter. The Armenian data are then compared to some data from Basque which seems to have similar focus- and Wh-constructions. It is then argued that the analysis given by Laka for the Basque data in "Negation in Syntax" cannot account for the Armenian data because Basque has overt focus movement whereas Armenian has only auxiliary movement.

In chapter 2, Chomsky's minimalist theory and Brody's Lexico-Logical Form theory are summarized. It is then argued that by using Brody's LLF theory, the Armenian data can be explained in a principled way. A structure for the Armenian clauses is introduced in this chapter and, on evidence from indefinites and case theory, it is argued that although Armenian is an SOV language, it has a head initial IP and VP. This follows from Kayne's "Antisymmetry in Syntax" where it is argued that all languages are head initial.

In chapter 3, multiple Wh constructions are analyzed. A summary of Rudin's "On Multiple Questions and Multiple WH Fronting" article is given, and the Armenian data are compared with data from some of the Slavic languages which Rudin deals with. It is then argued that in Armenian Wh constructions and Focussed constructions are subcases of the same process. Evidence is then provided to show that in Armenian Wh-phrases must be licensed as [+f] elements and partial "Wh-movement" is a result of this licensing requirement.

In chapter 4, indefinites and negative structures are analyzed. It is argued that the cliticization of the auxiliary onto the indefinite takes place because indefinites do not get case although they may appear in the spec of AGROP. For negative constructions, it is argued that because negation is a [+f] element it must have the auxiliary cliticized onto it like all other [+f] elements. Finally it is argued that the reason why the auxiliary follows negation and precedes the verb has to do with the fact that the heads involved in creating this structure do not "move" head to head. Evidence is then given to show that it is possible to have such structures without violating the ECP.

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CHAPTER 1

1. OVERVIEW

1.1. INTRODUCTION

"Armenian" is a general name which refers to three different forms of the language: Classical Armenian, Modern Eastern Armenian and Modern Western Armenian. The language that is being dealt with here is Modern Eastern Armenian. This is the standard language used in Armenia today. Modern Western Armenian is also used today, but it is considered to be "The Language of the Diaspora". This is used all over the world after the Armenian genocide which took place at the beginning of the twentieth century in Western Armenia. Both forms of Modern Armenian are used as standard languages. The two differ in some of their phonological and syntactic properties (eg. Eastern Armenian has a distinction between voiced, voiceless and ejective sounds whereas in Western Armenian ejectives do not exist at all. Also there are syntactic differences such as different case marking processes etc.).

Most importantly for our purposes here, the auxiliary movement which is obligatory with Focus- and Wh-constructions in Eastern Armenian does not exist in Western Armenian except with negation. I suggest that this has to do with the fact that in Eastern Armenian the auxiliary can appear on elements in specifier positions whereas in

Western Armenian the auxiliary seems to appear only in head positions (the Eastern Armenian data will be discussed in Chapter 2). It will become clear in later chapters that while the head position is preferred by the auxiliary in Eastern Armenian it is possible (and in fact necessary) to have this element cliticized onto the head of the element in certain specifier positions. This last option seems not to be available in the case of Western Armenian. Throughout the thesis I deal only with Eastern Armenian and I shall be using the more general name "Armenian" to refer to it.

1.2. THE BASIC STRUCTURE

Armenian is an SOV language with a relatively free word order. In ordinary declarative sentences there is usually an auxiliary following the main verb. The only tense which does not take the auxiliary is the simple past tense. The following word order is the basic unmarked order in Armenian declarative sentences.

- 1) sirane surikin djanatchum e¹
 Siran-nom Surik-acc Knowing is
 "Siran knows Surik"

The language has a rich case marking system and scrambling is allowed. All the following examples are also

¹There is an appendix attached to this thesis containing all the inflexions of nouns, Wh-phrases and the auxiliary which have been used in the thesis.

grammatical although stylistically some are preferred over the others.

- 2) a. surikin sirane djanatchum e
Surik-acc Siran-nom knowing is
- b. sirane djanatchum e surikin
Siran-nom knowing is Surik-acc
- c. surikin djanatchum e sirane
Surik-acc knowing is Siran-nom
- d. djanatchum e surikin sirane
knowing is Surik-acc Siran-nom
- e. djanatchum e sirane surikin
knowing is Siran-nom Surik-acc

What it is not possible to have however, is an element intervening between the verb and the auxiliary. So if we try to separate the auxiliary from the verb we get ungrammaticality.

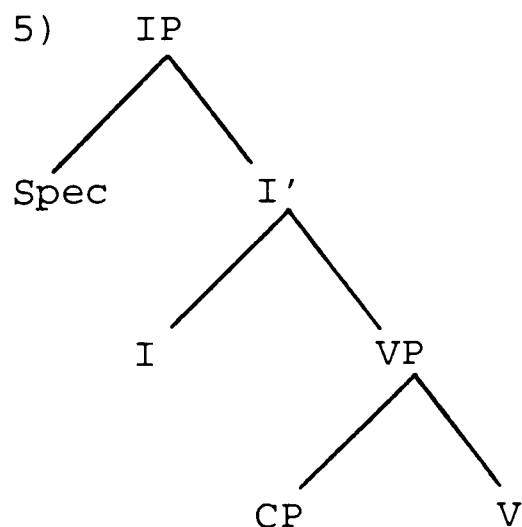
- 3) a. * sirane djanatchum surikin e
Siran-nom knowing Surik-acc is
- b. * sirane surikin e djanatchum
Siran-nom Surik-acc is knowing

Thus, in declarative clauses the auxiliary must always follow the verb or the sentence will be ungrammatical.

The embedded clause has the following word order:

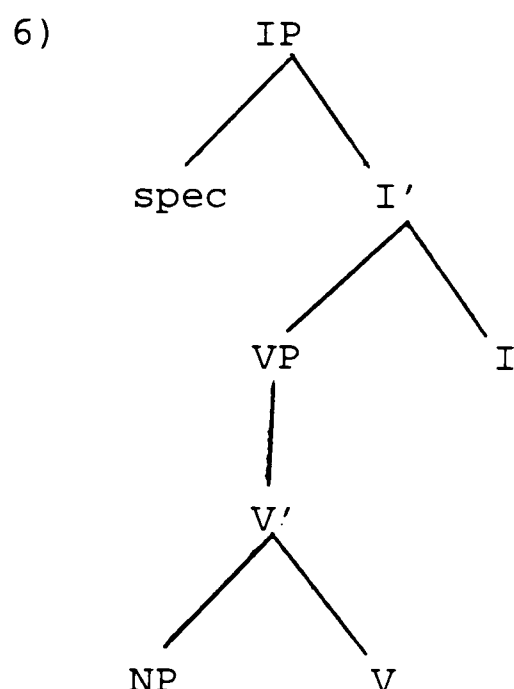
- 4) sirane asum er vor surike girke genel e
 Siran saying was that Surik book-the bought is
 "Siran was saying that Surik has bought the book"

Being a head final language, one expects the default situation in embedded structures to be one where the main verb and the auxiliary appear as the rightmost elements in the structure following the embedded clause as shown by the following abstract structure.



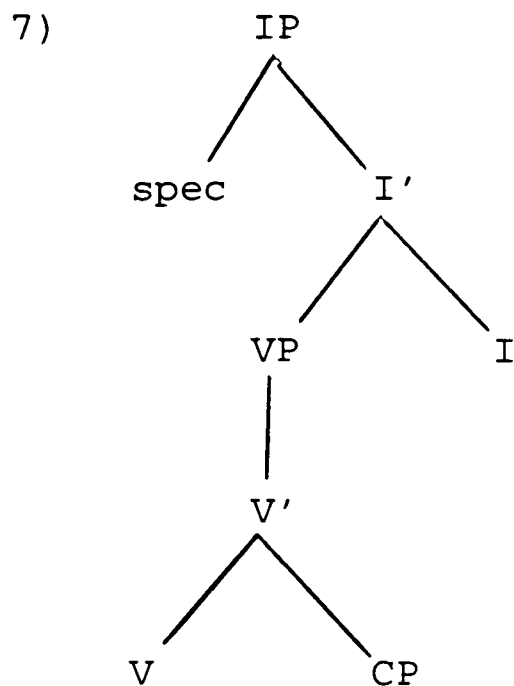
This however, is not the case. I shall argue that the position where elements get case is to the left of the

verb. Thus CP, a category which does not get case, appears to the right of V'. As embedded clauses are complements to which case is not assigned, they appear to the right of the verb rather than in the case position which is to the left of the verb. Let us assume for now that main clauses in Armenian have the following structure.



Let us assume for now that I selects the VP to its left and the verb selects its object to its left where it is assigned its case (but see chapter 2)². With embedded clauses the structure looks like the following.

²I shall argue later that the inflexional projections and the VP are all head initial. This will be straightforward if a more articulate structure is used. For now, it is sufficient to have the simple trees given above with a head final IP and VP, bearing in mind that these are not final.



In order to show that there are chains involved in the Armenian focus and Wh constructions, I shall consider some island effects which these constructions show. Both Wh- and Focus constructions show island effects of the same type. Considering the fact that only chains involve island effects, if the Armenian focussed and Wh constructions both show similar island effects, it must be the case that both constructions are formed through chains of the same type. First however, let us examine some other general properties of Focus and Wh-movement.

2. FOCUS AND WH MOVEMENT AND THE AUXILIARY

2.1. THE CLAUSE STRUCTURE

In this section I shall discuss the behaviour of the auxiliary in the structure of declarative and interrogative sentences as well as in non-interrogative focussed

constructions. After examining the different positions in which the auxiliary can occur, I shall argue that the behaviour of the auxiliary makes it necessary that Armenian be considered an LF based language where LF should be taken as the basic level of representation. In order to show this, I shall first try to explain the Armenian data in the traditional way, and argue that this cannot be the right approach by indicating some of the problems which arise.

2.1.1. THE DATA

As mentioned earlier, to a first approximation, Armenian seems to be a head final language with SOV surface word order. Being a head final language, the auxiliary verb in this language appears as the rightmost element in declarative sentences³.

- (8) sirane surikin sirum e
Siran_{nom} Surik_{acc} liking is
"Siran likes Surik"

In declarative sentences it is not possible to have the auxiliary in any other position, as the following ungrammatical examples show.

³ This does not hold with indefinite objects which will be discussed in chapter 4.

(9) a. * sirane surikin e sirum
Siran_{nom} Surik_{acc} is liking

b. * siranen e surikin sirum
Siran_{nom} is Surik_{acc} liking

In declarative sentences the auxiliary must always follow the verb. Notice that being the rightmost element in the structure is not a requirement which has to be satisfied by the auxiliary. The important fact is that no element other than the verb can precede it. Thus, it is not possible to scramble elements in such a way that the verb is separated from the auxiliary.

(10) a. * sirum sirane surikin e
liking Siran_{nom} Surik_{acc} is

b. * surikin sirum siranen e
Surik_{acc} liking Siran_{nom} is

Scrambling is allowed in Armenian declaratives as long as the verb and the auxiliary remain together.

(11) a. surikin sirane sirum e
Surik_{acc} Siran_{nom} liking is

b. sirane sirum e surikin
Siran_{nom} liking is Surik_{acc}

- c. sirum e sirane surikin
liking is Siran_{nom} Surik_{acc}

Thus, all the above examples are grammatical, because the auxiliary is preceded by the verb in all of them. Because of the fact that no element can intervene between the auxiliary and the verb in declarative sentences, I shall argue that the auxiliary is a clitic and attaches to the verb in declaratives, so that it cannot be separated from the verb⁴. In what follows more evidence will be given to show that this is the case.

The position of the auxiliary with respect to the verb changes when there is a focussed element or a WH-phrase in the structure. In these cases the auxiliary moves to a position adjacent to the focussed or WH-phrase. Consider the following examples:

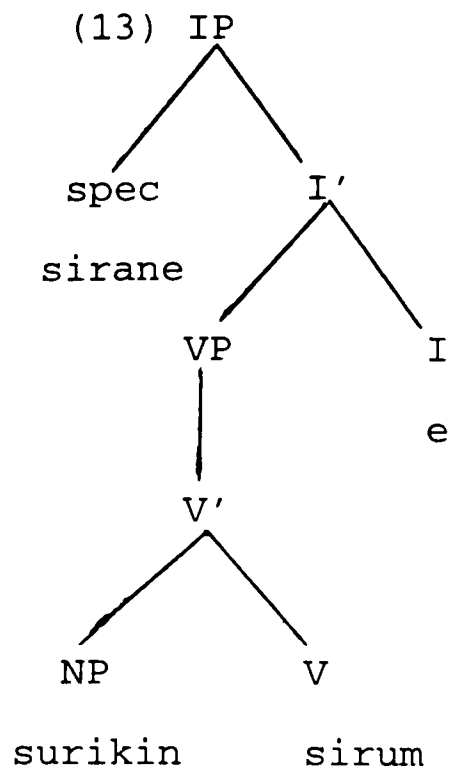
- (12) a. OV e siranin sirum
WHO is Siran_{acc} liking
"who likes Siran"
- b. * OV siranin sirum e
WHO Siran liking is

⁴I sometimes refer to the auxiliary as a clitic and sometimes as an affixal element. I believe this element to be a clitic because it can appear on the verb as well as focussed phrases. This is a property which affixes do not have. Affixes always attach to a specific category of elements (either verbs or DPs etc.).

c. SIRANEN e surikin sirum
 SIRAN_{nom} is Surik_{acc} liking
 "It is Siran who likes Surik"

d. * SIRANE surikin sirum e
 SIRAN_{nom} Surik_{acc} liking is

The elements in block letters are focussed elements. I am assuming here that WH-phrases are also focussed. In fact I am considering WH-phrases to be a kind of focussed phrases (see chapter 3 for evidence). As the examples show, it is not possible to have the auxiliary with the verb when there is an element in the clause which is focussed. Considering the fact that the auxiliary is affixal it must be the case that in those cases the auxiliary is affixed onto the focussed element. This would then suggest that the auxiliary and the focussed elements must be in positions where cliticization is possible. This is possible either through a spec-head relation or by head to head movement. Let us first look at the declarative sentence structure. Assuming an IP and a VP in the structure we get the following (provisional) tree.



In this structure it is not implausible to assume that because of the affixal nature of the auxiliary the verb moves to I in order to support the auxiliary which is base generated under I. There is however, strong evidence to show that the verb is in situ at S-structure and the auxiliary is attached to it. Recall, for instance, the examples with embedded clauses which follow the verb.

(14) aran asum e vor sirane surikin tesel e

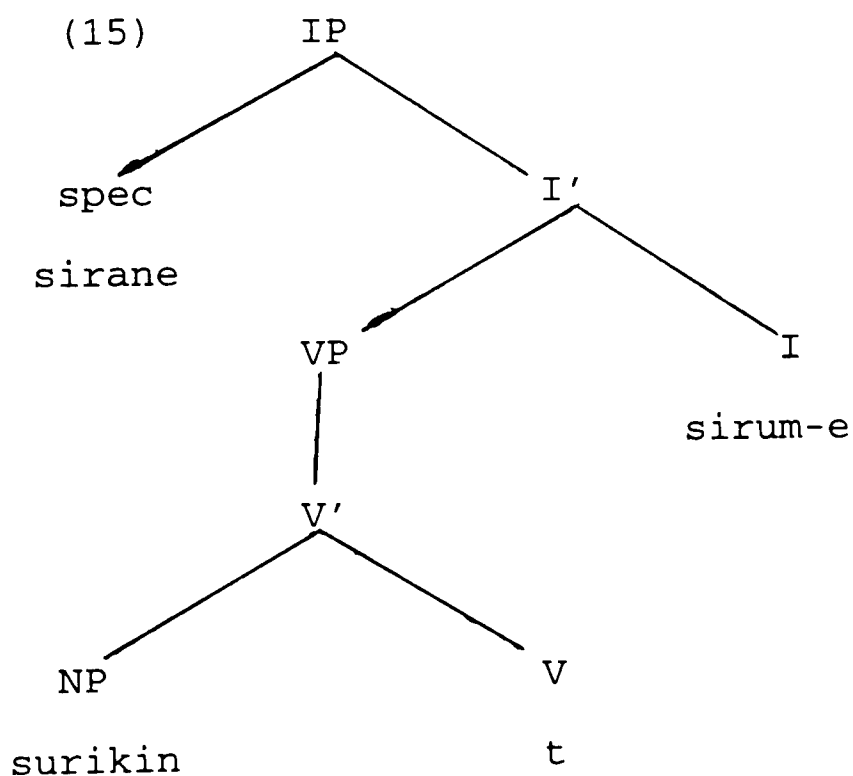
Ara-nom saying is that Siran-nom Surik-acc seen
is

"Ara is saying that Siran has seen Surik"

In such cases the verb has to be in situ at S-structure in order to create the right order⁵. As for the affixal nature

⁵ Notice that this could be the result of the extraposition of the embedded clause as proposed in Stowell (1981) in which case the verb will not have to be in situ.

of the auxiliary, there is also orthographic evidence suggesting that the verb and the auxiliary form a unit. The auxiliary verb with almost all its inflexions start with a diphthong "je". This diphthong is always pronounced as a [je] when it is the first element in a given word. However if it is used in the middle of a word, it is always pronounced as a pure vowel [e]. Thus, in the word "Yerevan" the same symbol is used for the initial diphthong [je] and the vowel [e] which appears after the "r" in this word. The fact that the auxiliary is always pronounced with an "e" suggests that it forms a single unit with the word which it follows. Thus the structure that we have constructed so far will be the following:



However, see below for further evidence showing that the verb is indeed in situ.

So far, this structure seems to be a plausible one. Let us now turn to structures with focussed elements.

2.2. LOCALITY

Let us now examine some of the locality conditions in Armenian⁶.

I shall be discussing Wh-movement and Focus-movement which seem to obey the same locality restrictions.

2.2.1. ISLAND EFFECTS

In this section I shall discuss some well known islands in English, and then I shall compare them to Armenian.

Armenian is a language with no syntactic Wh-movement. Consider the following examples.

- 16) a. sirane surikin tesav
 Siran-nom Surik-acc saw
 "Siran saw Surik"

⁶ In the following examples I shall use the one tense which does not need an auxiliary verb in order to avoid any complications. Cases with the auxiliary will be discussed in detail in the following chapters.

- b. sirane ume tesav⁷
 Siran-nom whom saw

However, it is possible to extract a Wh-phrase provided that there is more than one Wh-phrases in the same embedded clause. Consider the following example:

- 17) a. pro kartsum es ov umen e sirum
 pro thinking are-you who whom is liking
 "who do you think likes whom"
- b. ume kartsum es ov e sirum
 whom thinking are-you who is liking
 same

If there is a single Wh-phrase in the embedded clause however, extraction is not possible, as in the following example.

- 18) a. kartsim es surike umen e sirum
 thinking are-you surik whom is liking
 "who do you think Surik likes"

⁷ The example (b) does not necessarily show that there is no syntactic Wh-movement because the subject in this case can be considered to be topicalized. There is however evidence to show that the Wh-phrases are in situ at S-structure. The evidence will be discussed in chapter 2.

- b. * ume kartsum es surike sirum e
 whom thinking are-you Surik liking is

It should be noted that foci in general, and not only Wh-phrases show island effects which suggests that they are both subcases of the same syntactic process. Let us consider the examples.

As with Wh-phrases, it is not possible to extract a focussed element out of an embedded clause unless there is more than one focus in that embedded clause. Consider the following examples which are identical to the examples (a) and (b) given above but in which the Wh-phrases have been replaced with non-interrogative foci. These could in fact be considered as answers to the respective questions.

- 19) a. kartsum em SIRANE SURIKIN e sirum
 thinking am SIRAN SURIK is liking
 "I think that SIRAN likes SURIK"
- b. SURIKIN kartsum em SIRANEN e sirum
 SURIK thinking am SIRAN is liking
 same

As in the case with Wh-phrases, it is not possible to extract the only focus in the embedded clause.

- 20) a. kartsum em sirane SURIKIN e sirum
 thinking am Siran SURIK is liking
 "I think it is Surik whom Siran likes"
- b. * SURIKIN kartsum em Sirane sirum e
 SURIK thinking am Siran liking is

Again, matrix auxiliary "movement" does not help in this case.

- 21) * SURIKIN em kartsum Sirane sirum e
 SURIK am thinking Siran liking is

Notice that in both grammatical cases the matrix auxiliary follows the matrix verb. The structure of such examples is discussed in Chapter 3.

The same locality conditions hold with Wh islands.

Thus, extraction of Wh and focussed elements out of embedded clauses which contain a wh-phrase is possible. With this in mind let us look at some island effects in Armenian.

2.2.1.1. WH ISLANDS AND TENSE ISLANDS

Consider the following English examples.

- 22) a. what_i do you wonder [how_j [to fix t_i t_j]]
- b. *How_j do you wonder [what_i [to fix t_i t_j]]

The same pattern also holds in Armenian as in (12).

- 23) a. inche_i uzum es [inchpes t_i norokel]
 what wanting are [how t repair_{inf}]
- b. *inchpes_j uzum es [t_j inche norokel]
 How wanting are [t what repair_{inf}]

Notice that in Armenian infinitival clauses, the same pattern holds as with tensed clauses. That is, extraction of the adjunct Wh-phrase is not possible out of a tensed clause, whereas argument Wh-phrases can be extracted from tensed clauses as in infinitivals. Consider the following examples.

- 24) a. inche_i kartsum es [surike inchpes e t_i
 norokel]
 What_i thinking are [Surik how is t_i
 repairing]
- b. * inchpes_i kartsum es [surike t_i inchen e
 norokel]
 How_i thinking are [Surik t_i what is
 repairing]

So Wh-island effects seem to hold in Armenian even though tense does not create a strong island unlike the English case. .

Consider now the following English examples.

25) a. * What do you wonder how John fixed

b. * How do you wonder what John fixed

The following examples show that when tense is combined with any of the so called "weak islands", such as Wh-islands, it creates a "strong island" effect. That is, extraction of both adjuncts and arguments is blocked by it.

26) a. what do you wonder how to fix

b. * what do you wonder how I fixed

In the first case the argument can be extracted from the infinitival clause. When the embedded clause is tensed however, extraction seems to be completely blocked. As the previous examples indicate, this is not the case in Armenian. That is tense does not create a strong island when it is combined with a Wh-island. Consider some further examples with negation as well as tense and a Wh-island.

- 27) a. inche tches imanum inchpes norogel
 what not-are-you knowing how repair-inf
 "What do you wonder how to fix"
- b. Inche tches imanum inchpes em norogel
 what not-are-you knowing how I repaired
 "What do you wonder how I fixed"

In Armenian both examples are grammatical.

Consider now the following examples with non-interrogative foci extracted:

- 28) a. AIS GIRKE kartsum es [Surike inchpes e t
 gerel]⁸

⁸In these examples I have capitalized the entire focussed DP. However, the entire DP is never stressed. It is only one element in the DP which is stressed. However, whether we stress the determiner or the noun, the auxiliary "movement" is not affected. In both cases the auxiliary must follow the DP as in the following examples.

- (i) yes AIS girken em sirum
 I THIS book am liking
 "It is THIS book that I like"
- * yes AIS girke sirum em
 I THIS book liking am
- (ii) yes ais GIRKEN em sirum
 I this BOOK am liking
 "It is this BOOK that I like"
- *yes ais GIRKE sirum em
 I this BOOK liking am

Thus, although semantically the two examples are clearly different, syntactically they behave the same way. Any stressed element in the DP triggers the auxiliary movement, and it is not possible to stress more than one element in

THIS BOOK thinking are [Surik how is t
written]

"How do you think Surik has written THIS
BOOK"

b. * TOGH BATS kartsum es [Surike vor girken e
t gerel]

WITH DOUBLE SPACING thinking are [Surik
which book is written]

"Which book do you think Siran has written
WITH DOUBLE SPACING"

As the examples show focus and Wh-movement pattern together with respect to Wh-islands. That is, as in the case of Wh-phrases, it is not possible to extract an adjunct focussed phrase out of a Wh-island.

Recall that Wh-phrases did not show tense island effects. Let us see if this is the same with focussed phrases in general.

Considering Wh-phrases to be focussed (see Chapters 2 and 3) we can use structures with one Wh element and one focussed non-Wh element to create tense island.

- 29) a. AIS PATUHANE tchem imanum inchpes norokel
THIS WINDOW not-am knowing how to fix
"I don't know how to fix THIS WINDOW"

the DP.

- b. AIS PATUHANÉ tchem imanum inchpes es norokel
 THIS WINDOW not-am knowing how are fixed
 "I don't know how you fixed THIS WINDOW"

As the examples here show, the tensed verb in the embedded clause does not block the movement of the focussed phrase.

2.2.1.2. NEGATIVE ISLANDS

Negation also seems to block adjunct extraction. Consider the following English examples.

- 30) a. What didn't you fix t
 b. * How didn't you fix it t

Exactly the same holds in Armenian as the following examples show.

- 31) a. inche tches norokel
 what not-are-you repaired
 "What haven't you repaired"
 b. * inchpes inknasharzhe tches norokel
 How car-the not-are-you repaired
 "How haven't you repaired the car"

Notice that in this case the ungrammaticality is not

caused by not moving the negated auxiliary in the matrix clause. Consider the following example which is still ungrammatical.

- 32) * inchpes tches inknasharzhe norokel
How not-are you car-the repaired
"how haven't you repaired the car"

Notice that this same pattern holds with infinitivals. That is, negation blocks the extraction of the adjunct Wh-phrases from the embedded infinitival clause.

- 33) a. inche tches uzum norokel
what not-are-you wanting repair-inf
"What don't you want to repair"
- b. * inchpes tches uzum inknasharzhe t norokel
How not-are-you wanting car-the t repair-inf
"How don't you want to repair the car"

Foci also show the same restrictions as Wh-phrases with respect to extraction out of negative clauses. Consider the following:

- 34) a. AIS INKNASHARZHE tchem norokel
THIS CAR not-am fixed
"I haven't fixed THIS CAR"

- b. * AIS GORTSIKOV inknasharzhe tchem norokel
THIS TOOL-WITH car-the not-am fixed
"I haven't fixed the car with THIS TOOL"

And exactly the same with embedded infinitival clauses.

- 35) a. AIS INKNASHARZHE tchem uzum norokel
THIS CAR not-am wanting fix-inf.
"I don't want to fix this CAR"

- b. * AIS GORTSIKOV tchem uzum inknasharzhe
norokel
WITH THIS TOOL not-am wanting car-the fix-
inf.
"I don't want to fix the car with THIS TOOL"

2.2.1.3. CNP ISLANDS

Complex NPs are also considered to be strong islands. No extraction is allowed out of a complex NP. Consider first the English example.

- 36) * Which book do you know the author who wrote t

Complex NP island effects also exist in Armenian.

- 37) * inchen es ain martun vor norokel e djanatchum
what are-you that man that repaired is knowing
"What do you know the man who has repaired t"

Notice that if the Wh-phrase is left inside the clause in which it originates, it will still not be possible to interpret the sentence.

- 38) * ain martun vor inchen e norokel djanatchum es
That man that what is repaired knowing are-you

This means that it is not the fact that the Wh-phrase has to remain in the clause overtly which causes the ungrammaticality, but even when the Wh-phrase is inside the complex NP an association between the scope position and the Wh-phrase in the relative clause is not possible. In other words, it is not possible for an element outside the complex NP, to form a chain with the Wh-phrase inside the complex NP.

Foci also obey CNP islands. consider the following examples.

- 39) * AIS GIRKEN em ain martun vor gerel e djanatchum
THIS BOOK am the man that wrote is know
"I know the man who wrote THIS BOOK"

And again as in the case of Wh-phrases even if the focused phrase is left in the complex NP the structure will be ungrammatical.

- 40) * ain martun vor AIS GIRKEN e gerel djanatchum em
the man that THIS BOOK is written know am
"I know the man who has written THIS BOOK"

2.2.1.4. SUBJECT ISLANDS

Subject islands are also strong islands.

- 41) * What did explaining t bother you

This also has a parallel in Armenian.

- 42) * inchen e t batsadredele kez neghatsnum
What is t explaining you bother
"What does explaining bother you"

Consider the following subject island violation with non-interrogative foci.

- 43) AIS GIRKEN e batsadredele indz neghatsnum
THIS BOOK is explaining me bothering
"explaining THIS BOOK bothers me"

On the other hand it is possible to have the entire subject act as the focus while only the DP "the book" is stressed as the following example shows.

- 44) AIS GERKI batsadren e indz neghatsnum
THIS BOOK-gen explaining is me bothering
"explaining THIS BOOK bothers me"

It will be argued in the next chapter that the auxiliary always follows the element associated with the Spec of FP. In the case where the entire subject is associated with the Spec of FP the structure is grammatical. On the other hand when only a part of the subject is associated with the Spec FP the structure is ungrammatical.

2.2.1.5. ADJUNCT ISLANDS

Another case of strong islands is the adjunct island.

- 45)* What was mary bothered because john explained t

Again the Armenian data seem to pattern with the English data as in the following example.

46) * inche sirane neghvets vorovhetev surike
batsadrets

What Siran bothered because Surik explained

"What was siran bothered because Surik explained"

Notice that, having said that extraction of a single Wh-phrase from a clause is barred, in this case, as in the previous case, even if the Wh-phrase remains in the adjunct clause it can only be interpreted as an echo question. This is not unexpected, because as in the previous case the Wh-phrase must relate to its scope position which is outside the adjunct phrase.

The same facts also hold for non-interrogative foci.

(47) * AIS KHENTIRE Sirane neghvets vorovhetev Surike
batsadrets.

This problem Siran annoyed because Surik
explained.

"THIS PROBLEM was Siran annoyed because Surik
explained"

2.1.2.1.6. THAT-t EFFECTS

Finally, that-t effects do not seem to exist in Armenian. In this respect the language contrasts with English which displays that-t effects. Consider first the English examples.

48) a. Who do you think will come

b. *Who do you think that will come

In Armenian on the other hand, both examples are grammatical.

49) a. kartsum es ov ke-ga

thinking are-you who will-come

"Who do you think will come"

b. kartsum es vor ov ke-ga

Thinking are-you that who will-come

"Who do you think that will come"

In chapter 3 an analysis will be given which provides a unified explanation for the lack of both that-t effects and superiority effects in Armenian.

To conclude: The fact that both Wh- and focussed phrases show the same kind of island effects clearly suggests that they are both subcases of the same process. The nature of the process still needs to be discussed. I shall even suggest in later chapters that Wh-phrases must have the +f feature (the feature that focussed elements carry) in order to have interrogative force.

2.3. A PROJECTION FOR FOCUSSED ELEMENTS

2.3.1. THE ARMENIAN DATA

There have been a number of proposals in the literature for dealing with focussed elements in the clause, e.g. Brody (1990), Laka (1990), Culicover (1992). The basic idea is the same in all the given works, namely that there is a separate maximal projection hosting focussed elements in the structure of the clause.

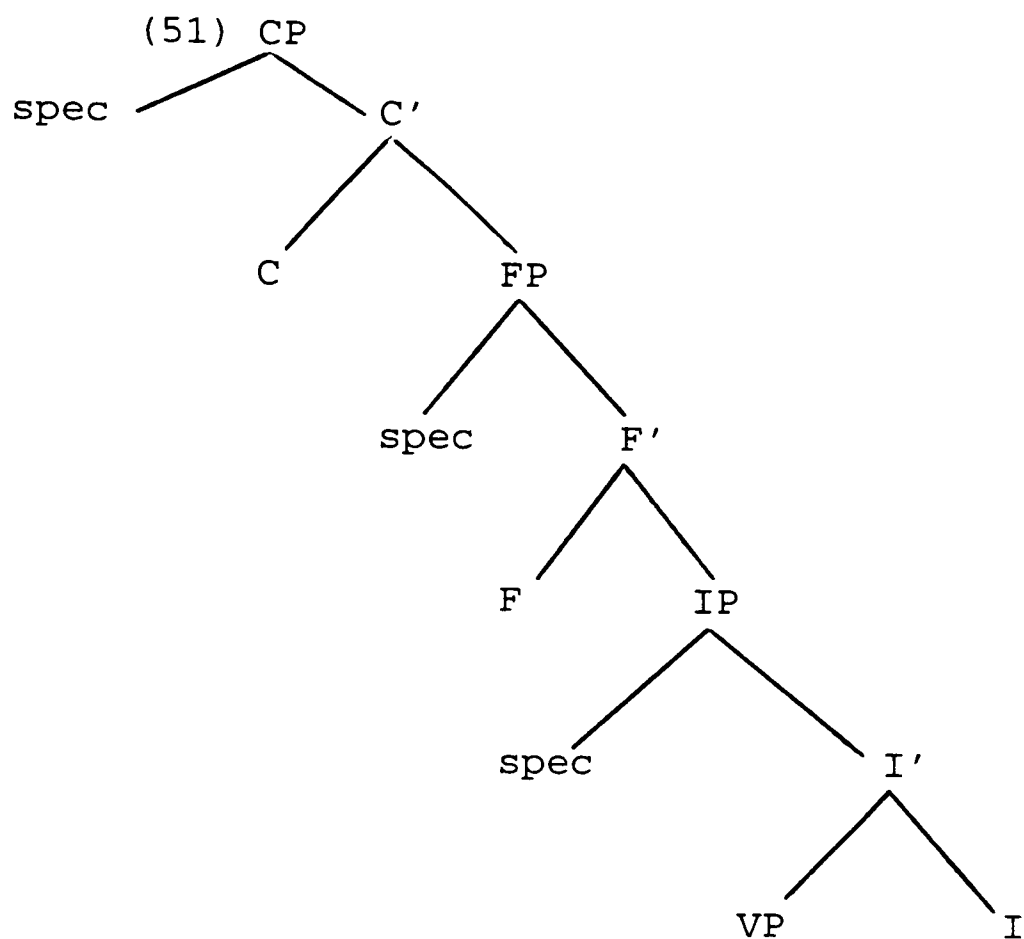
Brody (1991) suggests that this is a position higher than IP and he labels it the F(ocus)P (I shall use the same label for the maximal projection hosting foci in Armenian). In his analysis the verb moves to the head of FP in order to license the focussed element which appears in the spec of FP. Drawing on evidence from Hungarian, Brody assumes that F is a formative which has no phonetic content. Considering the fact that in Hungarian focussed elements are preverbal and that in multiple focussed constructions only one of the focussed phrases moves to FP, he draws an analogy between focus movement and wh movement in English. Thus, he assumes that there is a feature [f] which focussed elements are identified with. This is a feature which is also present in FP projections. He then gives the Focus Criterion which is similar to Rizzi's Wh Criterion. The Focus Criterion is given as the following:

(50) a) Each +f X must be in a spec-head relation with
a +f XP.

b) Each +f XP must be in a spec-head relation
with a +f X.

Considering the existence of FP to be universal, the fact that focus movement takes place overtly in some languages, and only abstractly in other languages, is a parameter parallel to the WH movement parameter which moves WH-phrases overtly in some languages and only abstractly in other languages. Thus, Hungarian for example, is a language which always has focus movement overtly, whereas English is a language which has abstract focus movement.

Let us now turn to the data in Armenian and try to explain the distribution of the auxiliary by a movement analysis similar to the one given by Brody (1991) for Hungarian. Let us assume that there is a projection FP in Armenian which is above IP and lower than CP. The structure that we get for the clause will then be the following:



Notice that there is evidence to show that there is an FP and a CP in the structure of the Armenian sentence. Consider the following examples.

- (52) sirane asum er vor SURIKEN e Arain tesel
 Siran saying was that SURIK is Ara seen
 "Siran said that it is Surik who saw Ara."

The fact that the complementizer is followed by the focussed element with the auxiliary cliticized onto it indicates that there must be two head positions involved. One for the complementizer (namely C) and one for the auxiliary (namely F). That the auxiliary is cliticized on the focus suggests that the focus and the auxiliary are both in FP. Thus, the head F is filled by the auxiliary and the complementizer must appear in a head position which is

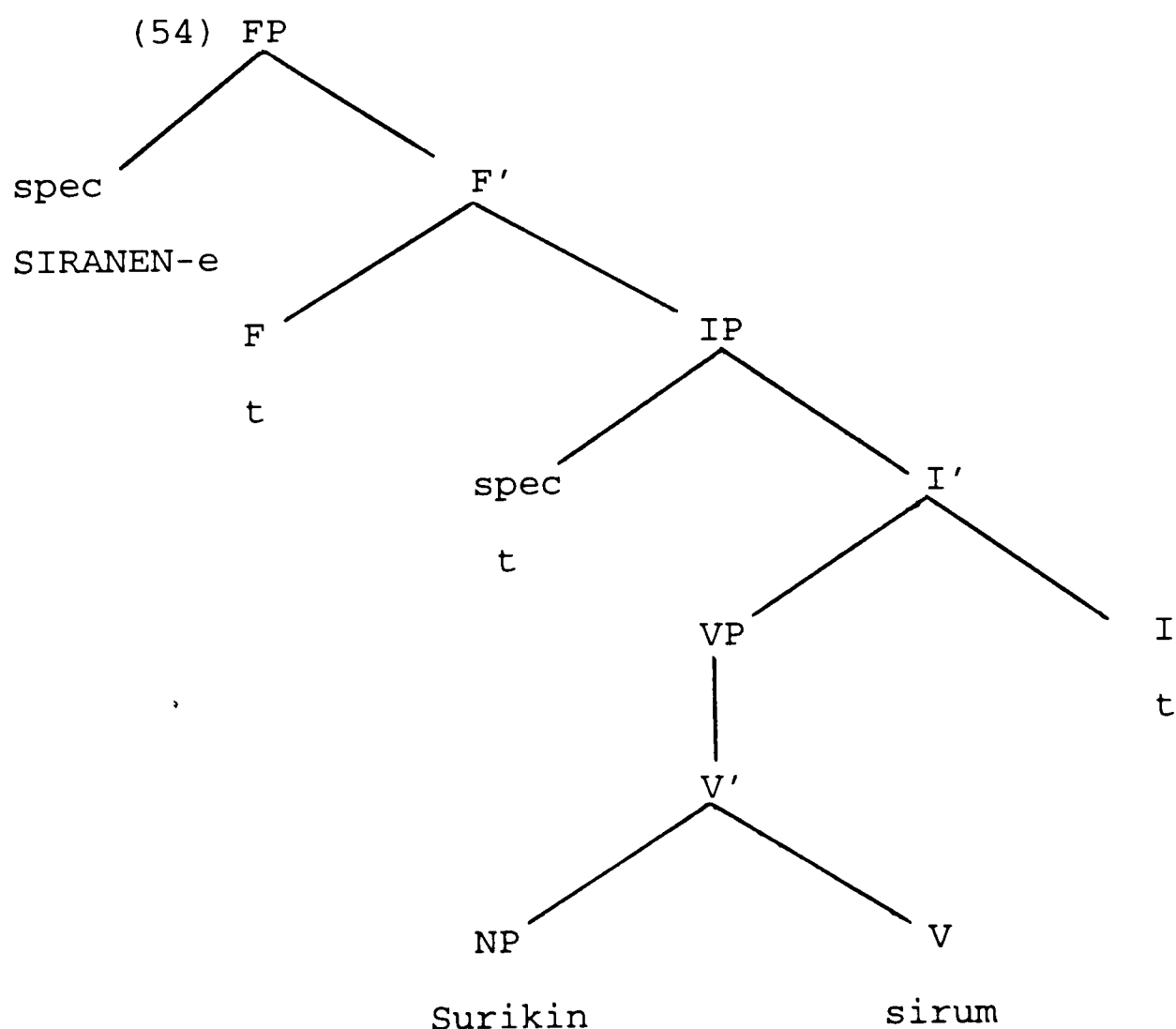
higher than the F as indicated by the order of the complementizer and the focussed elements.

At first glance Armenian seems to have overt focus movement. The movement of the auxiliary suggests that the auxiliary and the focussed element both move to FP overtly in Armenian, with the auxiliary realized on the focussed element rather than on the verb. So the structure of a sentence such as the one in (12c) repeated in (53) will be (54).

(53) SIRANEN e surikin sirum

SIRAN_{nom} is Surik_{acc} liking

"It is Siran who likes Surik"



This analysis forces us to say that in cases where there are elements preceding the focussed phrase they are topicalized. Thus the subject in the following example must be considered as a topicalized element.

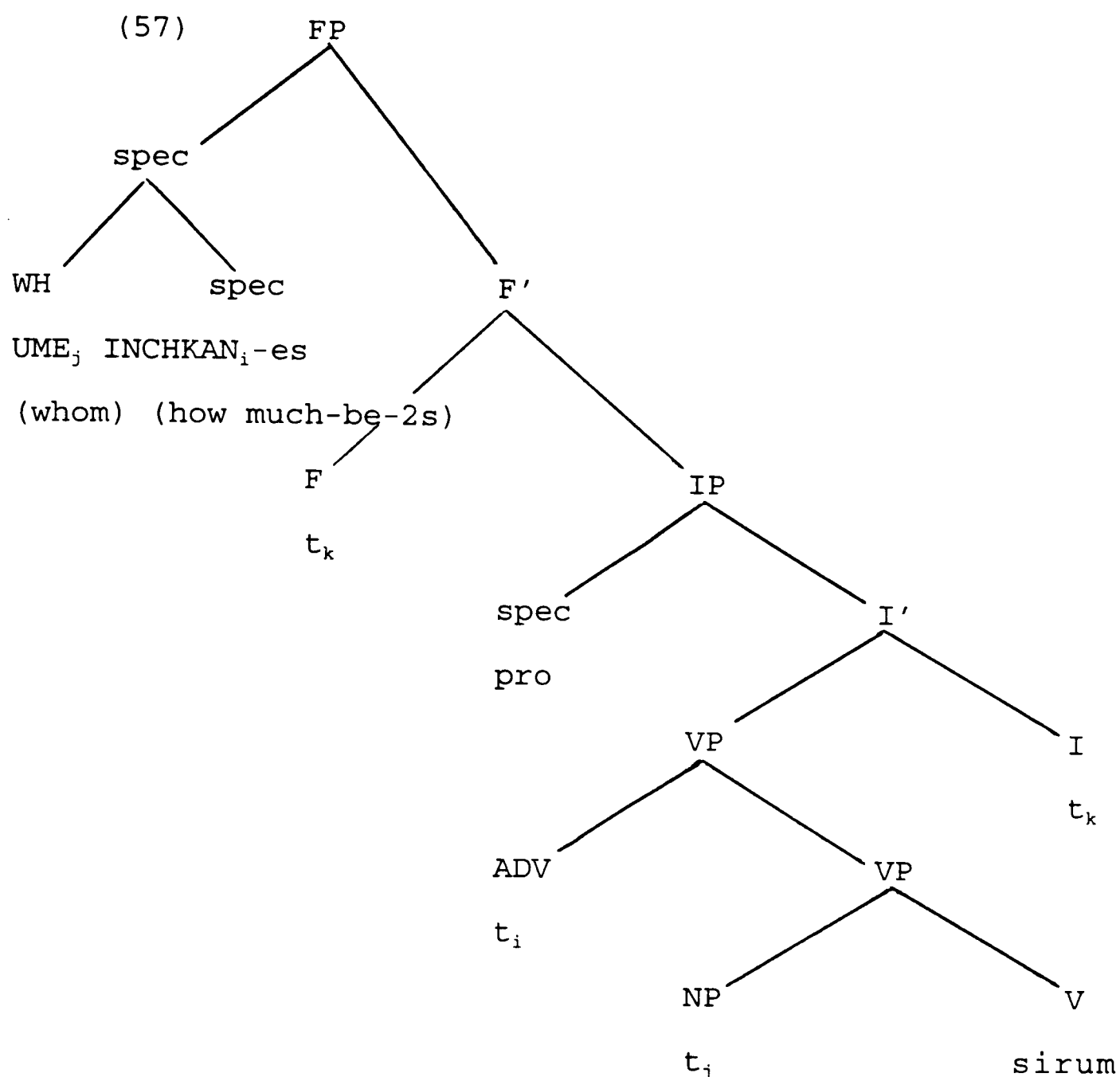
- (55) sirane SURIKIN e sirum
Siran SURIK is liking
"Siran likes Surik"

In what follows, I shall be arguing against this analysis.

Consider now the following examples.

- (56) a. UME INCHKAN es sirum
who_{acc} how much are-you liking
- b. * UMEN es INCHKAN sirum
who_{acc} are-you how much liking
- c. * INCHKAN UMEN es sirum
how much whom are liking

The structure of the grammatical example can be taken to be the following:



The above examples are intended to show that the auxiliary movement does have syntactic implications and it cannot be considered as a PF process. The position of the auxiliary determines the grammaticality of the sentence. The auxiliary must always immediately follow the last focussed or WH-phrase in a sequence or the sentence will be ungrammatical. Furthermore, the referentiality of elements also plays an important role in their relation with the auxiliary. The element which bears the auxiliary can either be a referential element or a non-referential one. (By

referential I mean elements which have a referential index in the sense of Rizzi (1990)). However, as the examples in (56) show, in a multiple Wh-construction, when the non-referential focussed phrase does not form a unit with the auxiliary, the structure is ungrammatical. The reason for this ungrammaticality has to do with the ECP. It is generally assumed that in multiple Wh-constructions one Wh-phrase is substituted in the specifier position of the CP (in this case FP), and the other Wh-phrases are adjoined to the spec. The one which is substituted in the specifier position is considered to be the head of the spec. If the non-referential element is not in the head of the spec of FP, then it will not be able to properly govern its trace. The reason for this has to do with the fact that by definition antecedent government is only possible by elements which have the same index and only the index of the head of the spec CP/FP is percolated to the entire spec. Consider the Comp indexing algorithm which was first stated in Aoun, Hornstein and Sportiche (1981) as:

(58) Comp-Indexing

$$[_{Comp} \dots X_i \dots] \Rightarrow [_{Comp} \dots X_i \dots]_i$$

The ECP requires all empty elements to be properly governed, and proper government is defined as the following in AHS⁹.

⁹ Notice that for our purposes here, it is not crucial to chose between a conjunctive or a disjunctive ECP.

- (59) A properly governs B if A governs B and
- a) A is a lexical category (Lexical government).
 - b) A is coindexed with B (antecedent government).

Later, Lasnik and Saito (1984) argued that this analysis of Comp indexing can be seen to proceed as the following. The element which is the head of spec CP (ie. the first element to move to the spec of CP in languages with overt movement) will percolate its index to the entire Spec.

Thus, in cases where elements need antecedent government, the antecedent has to be the head of spec CP (in this case FP), otherwise the trace will fail to be antecedent governed and the ECP will be violated.

Let us now turn to the examples given above. In the structure given in (57), the element which bears the auxiliary is the element in the head of spec FP. In other words, the auxiliary may only attach to the element which gives its index to the Spec (namely the head). The Wh-phrase which is adjoined to the Spec, has a different index and therefore cannot form a proper Spec-head relation with the auxiliary. This is a position that the auxiliary, under the head of FP, is coindexed with and cliticized onto. So the ungrammatical examples in the paradigm in (56) are in

fact predictable. In (56a) the adjunct which needs antecedent government is in the head position of the spec FP. this is evident from the fact that it has the auxiliary attached to it. in (56b) the auxiliary is attached to the argument Wh-phrase which means that it is this element which occupies the head position of the Spec FP, so antecedent government of the adjunct trace by the Wh-phrase is not possible. In (56c) also, the auxiliary is attached to the argument rather than the adjunct therefore again antecedent government of the adjunct trace is blocked.

2.3.2. LAKA (1990)

There have been other proposals in the literature which also assume a separate maximal projection to host elements which are focussed. The one which I shall summarise here is Laka (1990) which deals with Basque and proposes that elements that are focussed move to a projection Aff(irmative)P in this language.

The examples from Basque are similar to the Armenian examples given above. In declarative sentences the auxiliary is the rightmost element in this language as in Armenian, but it moves to a position adjacent to the focussed phrase or WH-phrase in focussed constructions. Consider the following examples:

(60) a. etxea erori da
house-the fallen has
"The house fell down"

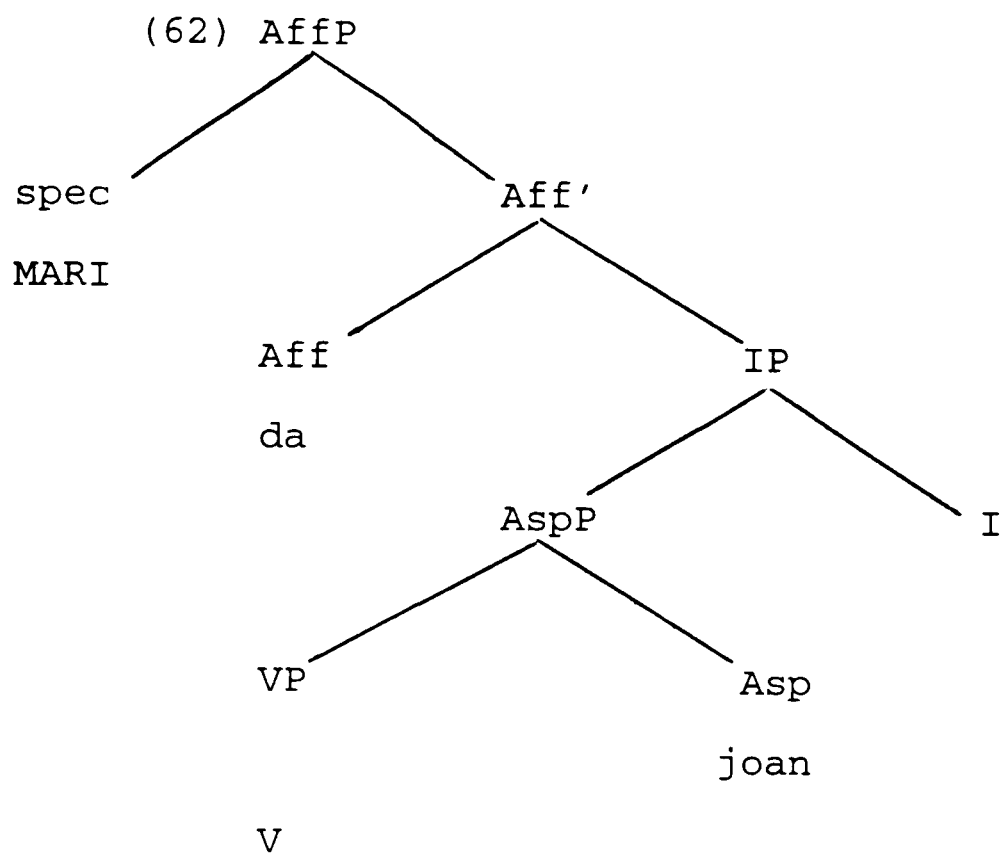
b. * etxea da erori
house-the has fallen

c. * erori etxea da
fallen house-the has

On the other hand, when there is a focussed element in the structure, the position of the auxiliary changes as shown in the following example.

(61) MARI da joan
MARY has left

The structure which Laka gives for these examples is the following:



The verb moves from V to the head of Asp(ect)P obligatorily. The focussed phrase moves to the spec of the AffP and the auxiliary moves to the head position of AffP to satisfy a condition which she calls the T(ense) C(-command) C(ondition). She defines this condition as follows:

(63) Tense C-command Condition (Laka 1990)

Tense must C-command at S-structure all propositional operators of the clause.

The examples from Basque concerning focussed phrases seem strikingly similar to the Armenian data. However, verb focussing in Basque shows clearly that there is overt movement in this language, whereas in Armenian it is not so

clear that this is the case. Consider the following examples from Basque.

- (64) a. badator emakume hori
 Yes-arrives woman that
- b. * pro dator emakumea
 arrives woman-the

The focussed verb is identified with the affirmative affix "ba" (yes). As the examples show, the verb moves to a position preceding its arguments when it is focussed. Notice that it is not possible to have the verb preceding the arguments if it is not focussed. This is shown in example (64b). In the grammatical case Laka suggests that the verb moves to AspP and then AspP as a whole moves to the spec of AffP leaving behind the arguments. In the ungrammatical case the verb is not focussed, therefore it can not move to AffP and leave the arguments behind. In other words, the bare verb (without the affirmative affix) can never be the first element in the structure.

This asymmetry shows clearly that focus movement in Basque takes place overtly. Consider now the following examples in Armenian which contain a focussed verb.

- (65) a. surike girke KARTUM e
 Surik book-the READING is
 "Surik is READING the book"
- b. ? KARTUM e surike girke
 READING is Surik book-the

Example (65b) is not acceptable contrary to the Basque example where the verb appeared in AffP when focussed. On the other hand, the grammatical example in Armenian seems to have none of its elements moved overtly. This fact creates a problem. On the one hand we have the movement of the auxiliary which is overt in focussed constructions and shows that focus movement is an overt process, and on the other hand we have cases such as (65a) with the verb focussed but in which no movement seems to have taken place, which indicates that there is no overt movement in verb focusing.

In dealing with this problem we need to consider an alternative way of looking at the derivation process. I shall argue in the following pages that the solution to this problem is to consider LF as the basic level of representation.

2.3.3. AN LF BASED APPROACH FOR ARMENIAN

The evidence from Armenian seems to suggest that we should consider an LF based approach in order to be able to account for the data. Let us first look at the data more closely and try to explain the examples in the standard way.

There are two problems with the standard approach. That is, if we consider D-structure as the basic level and S-structure and LF as levels derived from D-structure, the data cannot be explained in a systematic way. The problematic facts are the following.

(66) a) The verb appears in the V position when it is focussed.

b) There is no overt focus or Wh movement¹⁰.

In the following chapter multiple focussed constructions will be discussed, and it will be shown that in such cases not all focussed phrases are in their base position. The element bearing the auxiliary however, which concerns us here, is always in situ.

¹⁰The only element which appears in a different position is the auxiliary. So by no overt "movement" I mean the actual Wh- or Focussed phrase is in the root position of the chain. Notice also that, as it will be argued in the next chapter, in multiple Wh constructions some Wh-phrases do appear in non-root positions.

I have already discussed the first problem. Let us now consider the second problem.

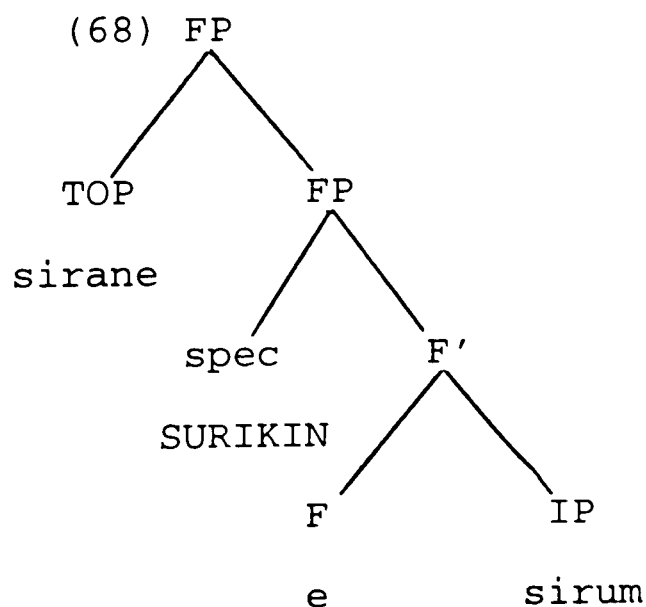
Let us first assume that there is overt movement using a movement theory with all the standard syntactic levels of representation.

Recall that the examples given so far could be analysed by overt movement of the auxiliary and of the focussed phrases to FP (the auxiliary to the head F and the focussed phrase to the spec), considering all other elements which precede the focus as topics. Let us consider the examples again.

(67) sirane SURIKIN e sirum

Siran SURIK is liking

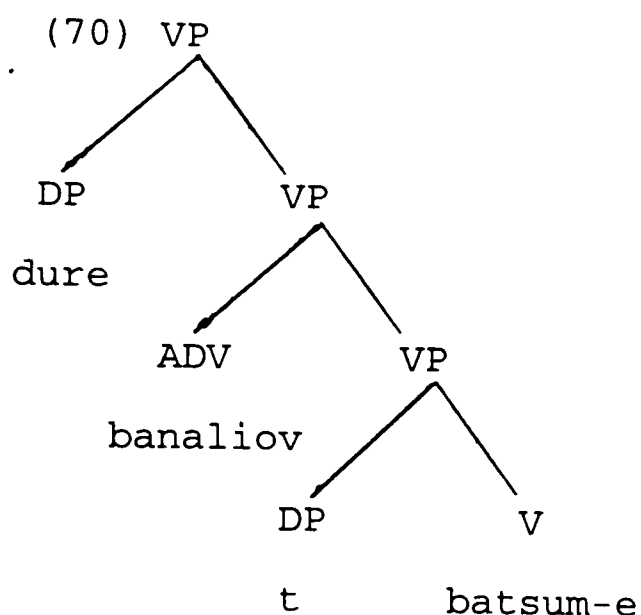
If there is S-structure movement, then the structure of the above example will be the following.



The object which is focussed moves to the spec of FP, the auxiliary moves to the head of FP and the subject is topicalized. Constructions such as the above example do not create any problems for this approach, but problems arise when we consider indefinites. The important fact about indefinites which concerns us here is that they cannot be scrambled. Consider the following examples (it will become clear later, when a more articulate clause structure is introduced, that the adverbial element is adjoined to AGROP).

- (69) a. sirane dure banaliov batsum e
 Siran door-the key-with opening is
 "Siran is opening the door with a key"
- b. sirane banaliov dure batsum e
 Siran key-with door-the opening is

Here the object "the door" being a definite DP can be scrambled and therefore both examples are grammatical. In the first case the object has been scrambled and adjoined to the VP (or a higher projection) therefore the adverbial intervenes between this element and the verb. The structure of the VP is the following.



In the second case the object has been left in place and this is the reason why the adverbial precedes it. Now consider the following examples with an indefinite object.

(71) a. *sirane dur e banaliov batsum¹¹

Siran door is key-with opening

b. sirane banaliov dur e batsum

Siran key-with door is opening

In this case, the first example is ungrammatical because the indefinite is placed in a position preceding the adverb. The only way to get this order is by scrambling the indefinite and this is not possible. The same is also true in the case of interrogatives. Consider the following

¹¹The auxiliary movement in this example is not the result of focussing. This is a matter which is not relevant to the discussion here and will be dealt with in chapter 4.

examples.

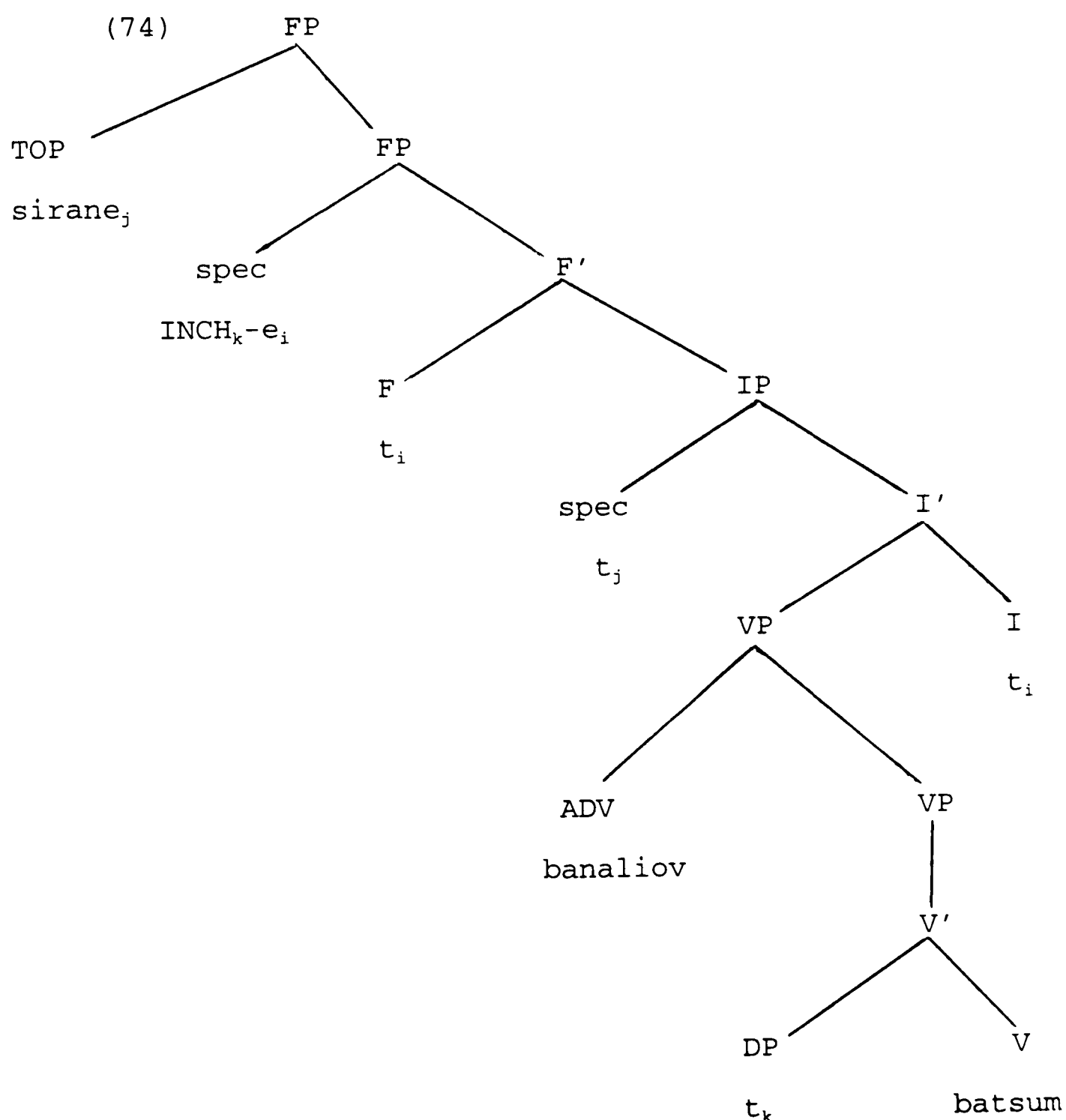
- (72) a. sirane banaliov INCHE e batsum
 Siran key-with WHAT-THE is opening
 "What_{def} is Siran opening with a key"¹²
- b. sirane inchen e banaliov batsum
 Siran what-the is key-with opening

Here as in the case of the non-focussed definite DPs, it is possible to scramble the definite Wh-phrase and have the adverbial intervening between the Wh-phrase and the verb as well as preceding the Wh-phrase. The indefinite Wh-phrase however, behaves in exactly the same way as the non-focussed indefinite. Consider the following examples.

- (73) a. *sirane INCH e banaliov batsum
 Siran WHAT is key-with opening
- b. sirane banaliov INCH e batsum
 Siran key-with WHAT is opening

¹²The definite article gives the Wh-phrase a referential reading. In fact, the Wh-phrase in this example can be interpreted as D-linked (in the sense of Pesetsky 1987).

If the Wh-phrase had moved to FP at S-structure, the first example should be grammatical. The subject would be topicalized, the Wh-phrase would be in the spec of FP, the auxiliary in F and the adverbial and the verb would be in positions inside the VP. In fact, this would be the natural order if there was overt movement of the indefinite as shown in the following tree.



The ill formedness of this structure can be accounted for by assuming that the indefinite Wh-phrase is in its

base position at S-structure.

Having established that the Wh-phrase is in situ in the above examples, we are faced with a problem. How does the auxiliary get attached to the Wh-phrase if this and all other elements are in chain root positions¹³?

We have also seen that when the verb is focussed it does not move overtly to a clause initial position. Thus it seems that focus movement in Armenian takes place at LF. The strange fact is that the results of this LF movement are visible overtly in the form of auxiliary movement.

Notice that this would mean that the TCC proposed in Laka(1990) is problematic with respect to the Armenian data where tense can be as low in the structure as the element bearing it appears. In any event, I shall take Brody's Focus Criterion to be responsible for the LF auxiliary movement to F.

2.2.1.4. A DIFFERENT ANALYSIS

There have been proposals in the literature suggesting that LF should be considered as the basic level of representation Brody (1985, 1987, 1991) . I adopt the theory put forward in Brody(1992/93) where there are no

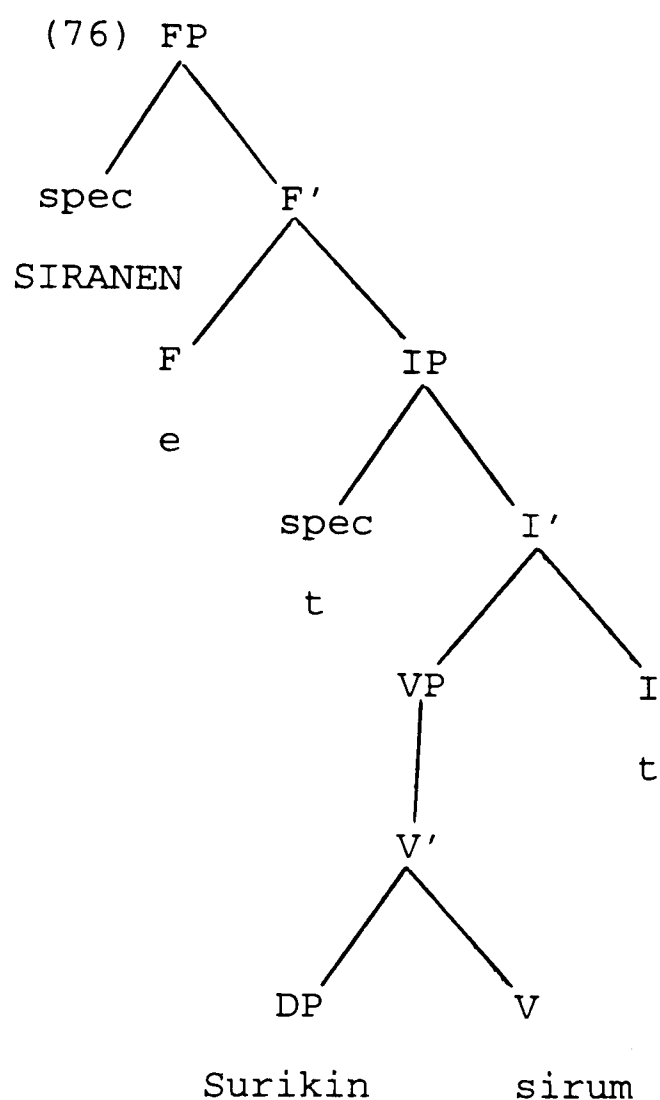
¹³A chain root position is the lowest link in the chain. The position which does not c-command any other link in its chain.

derivations and LF is considered as the only syntactic level (see chapter 2 for a summary of Brody (1992)). First I shall present the LF structures of the examples in the standard way. Then I shall translate the analysis of my data into the LLF framework (Brody 1992).

Let us now consider the LF structure rather than the S-structure trees. Consider example (12c) repeated here.

- (75) SIRANEN e surikin sirum
SIRAN-nom is surik liking
"It is Siran who likes Surik"

At LF the focussed phrase must be in its scope position. Thus, it will have to be in FP. The auxiliary will also have to be in FP to satisfy the Focus Criterion and to license the focussed element (see chapter 3 for details). So the LF structure of this example is the following.



We have already seen that at S-structure the focussed phrase is in situ. This means that the focussed phrase must appear in the lowest position in the chain. Notice further that the auxiliary is an affixal element which attaches to the element that it governs. In structures with no focus, the element to which the auxiliary cliticizes is the verb, which is head governed by the auxiliary. In cases where the auxiliary is in the head F of FP however, there is no lexical element which it can head govern (the next lower head is I which has no lexical element in it because the auxiliary appears in F itself), therefore it attaches to the element with which it is in a spec-head relation,

namely the focussed phrase in the spec of FP¹⁴. Thus, the auxiliary is attached to the focussed element linked to the spec of FP. Because of this LF spec-head relation of the auxiliary and the focussed phrase, the focussed element which appears in situ at S structure, carries the auxiliary with it as a cliticized element. This is the reason why the auxiliary appears with the focussed element rather than the verb. Notice however, that in the analysis just outlined LF must necessarily precedes S-structure, because it is the structure at LF which determines the order of elements at S-structure. So LF must necessarily be the input to S-structure. If such a theory exists, the data can be explained in a straightforward way. There is another solution to the problem however. That is using a theory with no derivations and only one syntactic level.

¹⁴I shall argue in the following chapter that it is not the focussed phrase itself which appears in the spec of FP. Rather, it is an empty expletive element which is linked to the focussed element inside IP through a chain. This follows from Brody (1993).

CHAPTER 2

A SOLUTION

1. LF BASED THEORIES

1.1. CHOMSKY (1993)

Chomsky (1993) proposes a minimalist programme for grammar along the following lines.

Language performance systems are of two types: articulatory-perceptual and conceptual-intentional. Any linguistic expression carries instructions for these two types of systems. Thus, there must be at least two linguistic levels which provide instructions for the two mentioned systems. These levels are called the "interface levels". In the Minimalist theory, all other levels are dispensed with because their functions can be performed by other mechanisms in the two existing levels.

Because language performance systems have the form given above, grammars will determine their own unique pairings to form their syntax. One member of the pair is the PF representation of linguistic expressions, and the other is their LF representation. Those parts of the system which are only relevant to the first member form the PF component of the language, those parts that are relevant only to the second, form the LF component. The part which is relevant to both members of the pair constitutes overt

syntax. A linguistic expression "converges" if it satisfies the "invariant" principles of grammar. These are principles which are relevant to either or both the PF and the LF levels. If these are not satisfied, the structure will not converge. It will "crash". The crash may occur either at PF or LF, depending on the reason why the structure does not converge.

Chomsky argues that apart from the two given interface levels, there is no need to postulate any other levels in the grammar. He states that the conditions on D-structure are dubious in nature and therefore they cause problems for the theory. He gives three arguments against D-structure.

First he argues that in the standard GB theory the constructions at D-structure cannot be formed by an unordered set of elements and therefore the way these elements are ordered needs to be clarified. Secondly, he argues that the conditions which apply at D-structure (namely the Projection Principle and the Theta Criterion) make this level have LF properties, and therefore they are "dubious on conceptual grounds". He argues that if these conditions are not satisfied at LF, the structure will receive no interpretation and it will automatically be ruled out at LF. Thus, having LF principles at D-structure is problematic conceptually and by eliminating D-structure the problem will be solved.

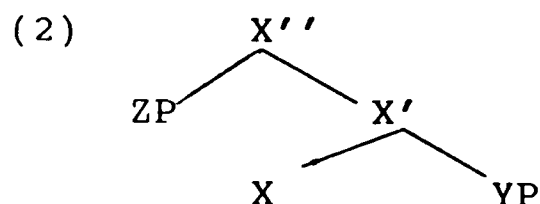
The third argument that he gives against D-structure is the following. In the standard framework the Projection Principle and the Theta Criterion are the two main principles which hold at D-structure. If the function of these two can be guaranteed by some other means, then there is no need to postulate a separate level (namely D-structure) where they have to apply. The main problem that the postulation of D-structure causes is the following. the problem has to do with the "easy to please" type constructions. Consider the following example.

- (1) a. John is easy to please
- b. John is easy [_{CP} O [_{IP} PRO to please t]]

(1b) is the standard structure for (1a).

In this structure John appears in a non-theta position and therefore it cannot be present at D-structure, because the Projection Principle and the Theta Criterion which together ensure that all arguments appear in theta positions, are D-structure conditions. In the structure it cannot be considered be the case that "John" has moved to the Comp of the lower clause and then moved further to the higher clause because it is not possible to move an element from an A position to an A' position and then to an A position again. Thus, if the DP "John" is not in a Theta-position, it couldn't have been present at D-structure. So the conditions on D-structure constructions fail to explain structures such as the one given above.

Chomsky assumes that all X-bar structures have the following form:



He also assumes that only local relations hold between elements, where relations between heads and their complements, heads and their specs, two adjacent heads and that of elements within a chain are all considered to be local relations. With these local relations, it is argued that the notion of government can be dispensed with simplifying the grammar considerably. For example, assuming a split Infl with two AgrPs, case assignment (or more precisely case checking) of the object which used to be done through head government by the verb is now done through spec-head agreement between the object in the spec of AGROP and the V+AGR in the head position AGRO. The ECM is also analyzed as raising of the DP in the lower clause to the AGROP of the higher clause. It is also argued that the licensing of pro and PRO can be reduced to a spec-head relation between this element and "[AGR ^{@AGR}], where @ can be either of the following: +tense or V, AGR strong or V=V*" .

Assuming that antecedent government is a property of

chains and can be equivalently expressed by using c-command and barriers, it is possible to dispense with the notion of government entirely.

Let us now return to the D-structure. We have already seen that "easy to please" type constructions are problematic for the idea of D-structure and the constraints that hold at this level. So if D-structure is eliminated, all the problems concerning the constraints on this level will also be eliminated. In the minimalist theory structures are projected in the following way.

- (3) (i) X
- (ii) [X' x]
- (iii) [X'' [X' x]

So, he assumes that a head is taken from the lexicon and this head projects its own X' and X'' levels. Then, he adopts a single G(eneralized) T(ransformation) which takes a phrase marker K' and inserts it in a given position in a phrase marker K. This process forms a new phrase marker K* which must satisfy X-bar theory. So, there is a structure S at each point in the derivation which consists of a set of phrase markers. Then there is the operation SPELL OUT, which can apply at any point in the derivation. SPELL OUT is the operation which switches to the PF component. At the point where SPELL OUT applies, if S is a single phrase marker the derivation converges. If S is not a

single phrase marker the derivation crashes because PF rules cannot apply to a set of phrase markers. After SPELL OUT, there is no more access to the lexicon. So no lexical material can be added to the construction after it reaches the point where it branches out to the PF component. This ensures that no lexical material is added on the way to LF and in LF.

Chomsky also argues that the need for S-structure is not compelling and gives evidence to show that S-structure can also be eliminated. He argues that there are two kinds of evidence for S-structure:

(4) (i) Languages differ as to where SPELL OUT applies in the course of the derivation to LF (Are wh-phrases moved or in situ? Is the language French-style with overt verb raising or English-style with LF verb raising?)

(ii) In just about every module of grammar, there is extensive evidence that the conditions apply at S-structure.

The first type of evidence is reduced to morphological properties of elements. For example the fact that English-type languages differ from French-type languages in the position of their verbs (in English the verb is in situ whereas in French the verb in I) is reduced to the "strong" vs. "weak" inflexional features in the two

languages.

He assumes that the elements have the inflexional morphemes on them from the lexicon, and these features are only checked against the features of the heads of the functional projections to which the inflected lexical elements move. For example, the verb which carries the inflexional features from the lexicon, moves to the inflexional heads in the structure to have its inflexional features checked against those of the inflexional heads. If these features match, the derivation converges and the features in the functional heads disappear. If the features do not match, the derivation crashes. Thus, that the verb is already inflected before moving to I. Checking of the features can then take place at any level, e.g. at LF. One of the arguments for the existence of S-structure was the following: Case features must be present at PF and must also be "visible" at LF, therefore they must be present at S-structure which has access to both components. With the checking theory this argument does not hold any longer, because within this theory elements carry their inflexional features before SPELL OUT (ie. before PF) anyway.

The fact that in English there is no overt verb raising and in French there is overt verb raising is then explained in the following way. Chomsky follows Pollock in assuming that in French Agr is "strong" and in English it is "weak". He then argues that "strong" features are

"visible" at the PF component and at the same time they are not legitimate PF objects because they are not associated with phonetic matrices. This forces the movement of the verb before the derivation reaches the PF component, because if the verb raises and its features are checked in the inflexional heads, the features of the heads will disappear and they will not reach PF as desired. On the other hand "weak" features are not "visible" at PF, so in languages which have weak inflexional features there is no need to raise the verb before PF.

He uses the principle "Procrastinate" to bar overt verb raising in English-type languages. "Procrastinate" means that LF movement is "cheaper" than overt movement therefore elements do not move overtly if they don't have to.

For auxiliary raising in English he argues that because of the fact that auxiliaries have no semantically relevant features, therefore they will not be visible at LF and they cannot raise at this level. So, they have to raise before LF. The difference between VSO and SVO (or SOV) languages is also attributed to the strong vs. weak NP-features of Tense in different languages; in VSO languages the feature is weak so raising can take place at LF, but in SVO languages this feature is strong so raising must take place by the time SPELL OUT applies.

As for the second type of evidence, he argues that principles which hold at S-structure (such as Binding conditions) can be taken to hold at LF. He gives the following example to argue for this.

who [t said he liked [how many pictures that John took]]

The LF structure of this example is the following:

[How many pictures that John took] who][t said he liked t']

In the first example John cannot be the antecedent of "he" because "he" c-commands John. At LF however, after the raising of the Wh-phrase [How many pictures that John took] and adjunction to "who" the pronoun will no longer be c-commanding the noun "John" and binding of the pronoun by "John" will be possible. This is not a possible interpretation however, which suggests that Binding conditions must apply at S-structure and not at LF.

Chomsky argues that it is possible to see the above Binding condition as an LF condition if the LF structure of the given example is taken to be the following.

[[How many] who][t said he liked[[t' pictures] that John took]]

In this case, only the Wh-phrase "How many" is raised at LF and the binding relations remain the same as before between the pronoun and "John".

In this way S-structure is also eliminated and we are left only with the LF and PF components. The interface levels.

1.2. BRODY (1992/93)

Brody argues that of the three arguments that Chomsky gives against D-structure, only one holds. This is the one which is given independently in Brody (1992), namely that D-structure principles (the theta-Criterion and the Projection Principle)¹⁵ are dubious in the sense that they make D-structure have LF properties. For "easy to please" type constructions, which Chomsky uses to argue against the postulation of D-structure, Brody provides an analysis which makes them unproblematic even for standard GB theory. He argues that such structures can be taken to be "movement" structures, with "John" moving from the object position in the embedded clause to the operator position in the same clause, and then to the non-thematic subject position in the matrix clause. Brody argues that the theta-Criterion can be dropped and therefore the uniqueness requirement between arguments and theta-positions will no

¹⁵Chomsky dispenses with the theta-Criterion and the projection Principle while Brody eliminates the theta-Criterion but maintains the Projection Principle as an interface condition.

longer hold. Thus, in such constructions the matrix subject position can be shared by two arguments where one of the arguments is the subject of a predication, and the other is the predicate variable. For the concept of S-structure in the minimalist framework, Brody notes that S-structure is viewed in this theory as the point where SPELL-OUT can apply, and from this point on there is no access to the lexicon. He then argues that if this notion of S-structure is taken, then while it is possible to reduce the first property (the point where SPELL-OUT applies) to PF rules, the second property (the fact that there is no more access to the lexicon) causes problems. This condition is necessarily an S-structure condition. This condition "regulates the interrelationship" of LF and PF (the only interface levels), therefore it cannot be placed in any of these levels. It follows that it must be an S-structure condition violating the Minimalist theory.

Brody(1992/93) takes a different approach in arguing for a system in which LF is considered to be the basic level of representation. The model he presents is the following:

(5)

chains --> LF --> PF

He takes LF to be the level where chains are formed. In earlier work, he argued for a system where derivations

started at LF and proceeded to S-structure and PF. So S-structure and PF were considered as levels abstracted from LF. In his LLF theory however, it is argued that there is only one level in the grammar, and that is the LF level. The argument goes along the following lines.

It is argued that the notion move-alpha is redundant and a theory with no derivations is put forward. He argues that even though the concept of move-alpha and the concept of chains are related, they are not identical. The most important difference between the two notions is that if move-alpha applies to an element, this element will have to be considered as appearing in two distinct positions in the course of the derivation, whereas the notion of chains does not require such an assumption. On the other hand, chains and move-alpha have some common properties. The most important common property between the two is the fact that the syntactic associations expressed by move-alpha and chains are constrained by the same locality principles (e.g. the ECP, Subjacency).

Because of the fact that the two notions are strictly related, it is argued that a theory which adopts both is redundant. The question then is, which notion is the correct one to adopt. Brody gives a number of arguments for adopting the notion of chains rather than that of movement.

The principle of Full Interpretation which operates at

LF (LF being the only semantic interface level) requires all (and only) elements which have a role in the interpretation of the structure to be present at LF. In other words, all and only those elements can be present at LF which receive an interpretation. Having this in mind, consider the following examples:

- (6) a. John was seen t
- b. Jean embrasse t Marie
- c. Why did you say Mary fixed this t

None of the traces in the above examples is a variable and none has an interpretation of its own, however all the traces in these examples are needed for the interpretation of the structure. In the first example, the NP trace must be there to relate John, the argument of seen, to its theta-role. In the second example, the trace of the verb should be there to ensure that the verb is related to the position where theta-roles are assigned. In the third example, the adjunct trace must be present at LF to relate the adjunct Wh-phrase to the element it modifies. Notice that the fact that the ECP holds at LF makes it necessary for traces to be present at this level. It follows that the traces violate FI because they do not get any interpretation. To avoid this he assumes, following Chomsky (1988, 1992), that it is chains as a whole which get

interpreted at LF. So, if an element is part of a chain, it will not get an independent interpretation. So, it is clear that the notion of chains is needed at LF independently of move-alpha to satisfy FI, therefore the concept of move-alpha is redundant.

Brody introduces the following condition:

(7) MAIN THEMATIC CONDITION (MTC)

Only the root position(s) (the one(s) that c-command no other member) of a chain can be theta related (ie. in a theta role assigning or receiving position).

He then gives further evidence, based on the MTC and parasitic gaps for a representational theory. The examples he deals with are the following:

(8) a. ??Who did you believe t to have visited you without you having invited t

b. **Who did you believe t to have met everyone who invited t

The first example is better than the second one. It is argued that in such parasitic gap structures we must consider a composed/generalized chain consisting of the chains of both the main and parasitic gaps. If so, in the

second example there will be one non-root position in the generalized chain (namely the VP internal subject position) which is thematic and a violation of the MTC arises. If this is correct, then it must be the case that the MTC holds for generalized chains. While it is possible to define the concept of generalized chains consisting of more than one chain, it is not plausible to use move- α in a way which would create such generalized structures.

He also gives another argument concerning the MTC. If there is only one semantic interface level (namely LF), then the MTC must hold at this level. On the other hand, the output of move- α may or may not be LF, because elements appear in non "base generated" positions overtly. The MTC must hold for all the relations expressed by move- α and not only those which happen in the last step to LF. On the basis of this, it is argued that the MTC must be considered as holding for chains rather than move- α .

He proposes that LF is directly related to PF. This is done through the operation "SPELL OUT" in the sense of Chomsky (1992).

Another argument against move- α goes as follows: Following Chomsky, Brody assumes the following.

"a category of type X projects other (higher level) categories of the same type X". This "Projectional

Requirement" holds only in the root position of the chain of X. He calls the set of chain root positions the D-set and gives the following generalization:

(9) Projectional requirements can only involve positions that belong to the D-set.

It is then argued that this fact creates a contradiction in the following way. If we consider chains to be LF objects, then the definition of a D-set must be dependent on LF. On the other hand, if LF is projected directly from the lexicon through the D-set, then it must be the case that D-sets are characterized independently of the LF representations. In order to resolve this contradiction he proposes that chains are presyntactically formed. He also points out that this contradiction is a serious problem for a movement theory, because while it is possible to have the concept of presyntactic chains, it is impossible to argue for presyntactic move-@.

The LLF theory works in the following way. Overt and non-overt "movement" relations are captured by chains only. Consider the following example.

(10) $[[op_y \text{ who}_x] [t_x \text{ wondered whether John bought what}_y]]$

It is assumed that this is the only representation of the chains involved in this structure, and this

representation is the LF representation. So, one of the chains in this construction will be [op, what]; the operator determining the scope of the Wh-phrase which is in the object position of the embedded clause. The other chain will be [who, t]. These chains will be subject to all the usual chain conditions (e.g. MTC, ECP, Subjacency). Thus, between the positions P_2 and P_1 in a chain, overt "movement" from P_2 to P_1 will be shown by a chain which has the Wh-phrase in P_1 and a trace in P_2 . On the other hand, in situ Wh-phrases are shown by chains which have the Wh-phrase in P_2 and an operator in P_1 .

So, overt and non-overt "movement" of standard movement theories are translated into LLF by means of the chain internal distribution of the lexical and non-lexical elements.

Both Brody and Chomsky argue for a theory which has only the interface levels (i.e. LF and PF), but most of the other properties in the two theories are different. Let us look at some of the differences which concern us here. Firstly, Chomsky still assumes a movement theory, where elements are generated in one position and during the derivation they move to another position. Thus, in the Minimalist theory move-@ is still the main feature creating chains. In the LLF theory on the other hand, the notion of move-@ is not used. There is only the notion of chains and

no movement is involved in creating them. This is in fact one of the reasons why Brody calls his theory a "Radically Minimalist" theory. The second point is the difference in Chomsky's notion of "Procrastinate" and Brody's "Transparency". While Chomsky still maintains the idea of Economy of Derivation (Procrastinate being a subpart of that), Brody uses the equivalent of Pesetsky's Earliness Principle in the LLF framework which he calls Transparency. The definition of Transparency is the following.

(11) Transparency

The contentive category in the chain must be in the highest position licensed by morphology.

In other words, Transparency means that lexical elements in a chain appear in the highest possible position. In a movement theory this would translate as: Elements move to the highest position available overtly unless they are stopped. This contrasts sharply with the idea of Procrastinate which requires elements not to move overtly if nothing forces the movement.

2. AN ANALYSIS WITH NO DERIVATIONS

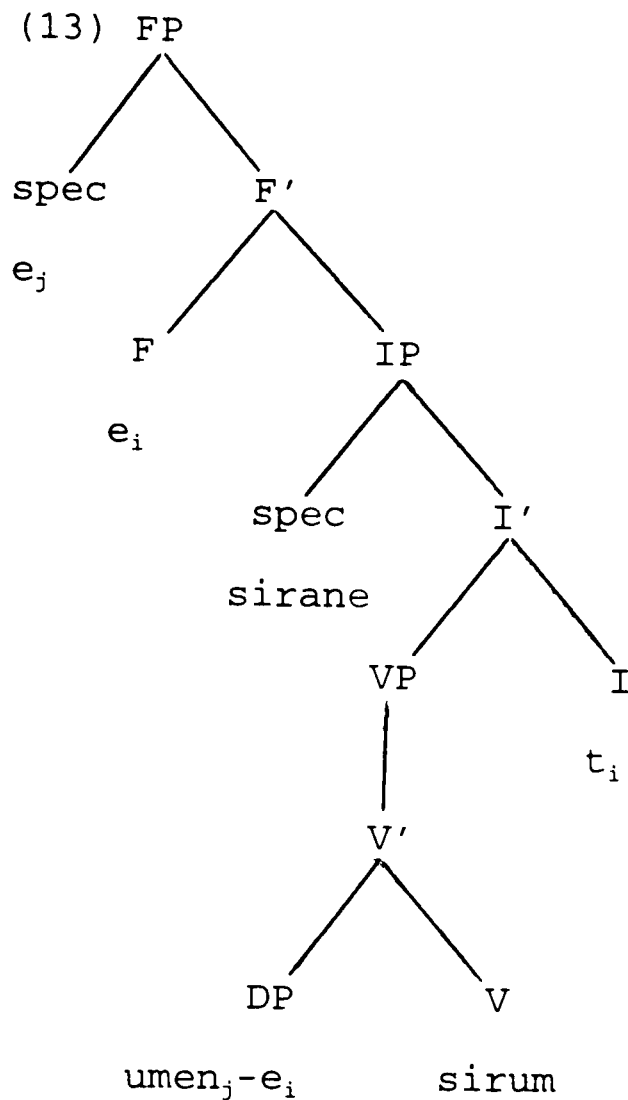
As mentioned earlier, Brody(1993) argues for a theory of grammar with no derivations. Recall that in this theory, which I have already outlined, the relations between elements are expressed by chains which are defined

independently of movement. The theory of Lexico Logical Form (LLF) considers LF as the only level of representation, and this is the level where structures are formed directly by inserting chains, which are formed presyntactically in the lexical component of LF, into trees. The structures that we had will be translated into this theory by having empty operators in the relevant chains and having abstract operator-variable relations in just one level. Let us consider an example.

(12) sirane umen e sirum

Siran who is liking

In this example I suggested that the auxiliary and the wh-phrase are in FP at LF, the auxiliary is affixal, so it cliticizes onto the Wh-phrase. At S-structure I suggested that the Wh-phrase moves to its base position and carries the auxiliary with it. In the LLF framework this will be translated in the following way. At LF, which is the only level of representation, we have two chains. One includes the Wh-phrase and the expletive in the spec of FP. The second chain includes the auxiliary and the empty element in the head of FP. The elements in the spec and head of FP are coindexed so the structure will have the following tree representation.



In the structure given above, we have two chains: the auxiliary, the trace under Infl and the empty element in the head of FP form one chain, and the Wh-phrase together with the expletive in the spec of FP form another chain. These two chains are then linked with each other under spec-head agreement in FP. It is a specific parametrised property of Armenian that Wh-phrases that bear the auxiliary are licensed in the root position of their chain. This is the reason why the Wh-phrase appears in situ (see chapter 3 for an analysis). Recall that the two chains (the auxiliary chain and the Wh-chain) are in a spec head relation in FP. The auxiliary is an affixal element and needs to attach to a lexical element. The lexical element

in the Wh-chain is the Wh-phrase itself therefore the auxiliary is attached to the Wh-phrase. Thus, the fact that both chains have members which are in a spec-head relation in FP suffices, given the "affixal" nature of the auxiliary, to trigger the cliticization of the auxiliary to the Wh-phrase.

Let us now consider some further examples.

- (14) a. sirane UME INCHKAN e sirum
 Siran WHOM HOW MUCH is liking
- b. *sirane INCHKAN UMEN e sirum
 Siran HOW MUCH WHOM is liking

I mentioned earlier that the reason for the ungrammaticality of the second example has to do with the ECP. With the analysis given above, the chain bearing the auxiliary must be the head of the spec FP. The auxiliary attaches to the lexical element linked to the head of the spec through its chain. Thus, the auxiliary indicates which element is the head of the spec FP. The ECP is then violated because the expletive in the adjunct chain fails to antecedent govern the other links of the chain from within a spec position which does not share its index. In the second example, the adjunct Wh-phrase is not able to properly govern its trace, because it is not the head of the spec FP. The fact that it does not bear the auxiliary

indicates this. Therefore the structure is ungrammatical.

It seems that a representational approach is the answer to the problems which arise with respect to the auxiliary. In such an approach, the movement of the auxiliary can be explained without requiring any other element to be in a position other than its base position. The auxiliary "movement" is a result of the positioning of the auxiliary and focus chains in the structure.

3. DIRECTIONALITY

3.1. A HEAD INITIAL ANALYSIS FOR VP AND IP

Now that it is established that the auxiliary is affixal,

we can re-consider the

basic clause structure of the VP and IP in Armenian.

Kayne (1993) argues that all projections are universally head initial. Following Kayne, Zwart(1993) argues for a head initial VP and IP for such non-controversial SOV languages as Dutch. In what follows I shall argue that this analysis can also be adopted for Armenian clause structure.

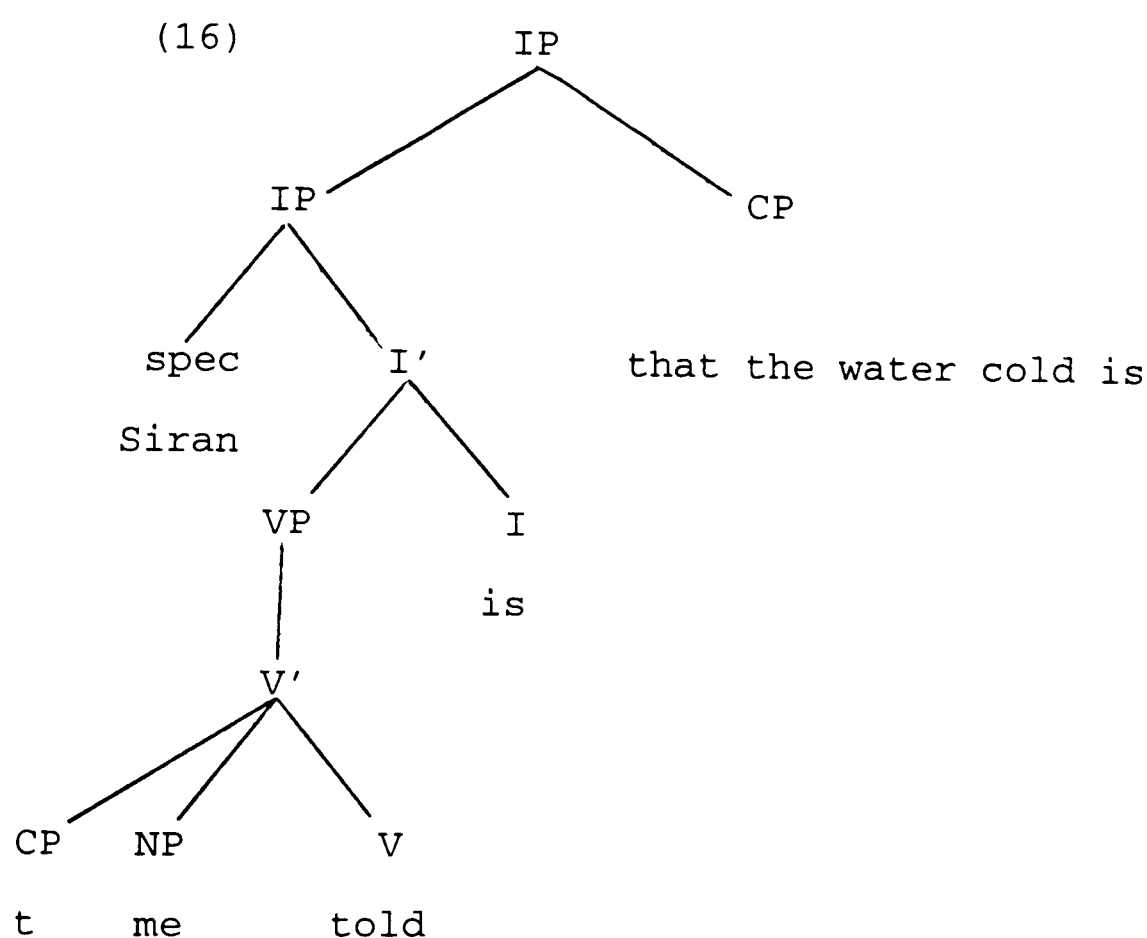
Consider now the following examples.

(15) sirane indz asel e vor djure saren e

Siran me told is that water-the cold is

"Siran has told me that the water is cold

Notice that in a language with a head final IP and VP this order is unexpected. Of course this order could be obtained by extraposing the embedded clause and adjoining it to the IP in the following way.



This is the analysis given in Stowell (1980) for embedded clauses in English. In fact Stowell argues that because of the Case Resistance Principle, the embedded clause cannot be in its base generated position, which is a case position, therefore it has to be extraposed. However, the fact that it is not possible to adjoin the embedded clause

to the left of IP at least in Armenian would suggest that this cannot be a case of adjunction. Consider the English examples showing that it is possible to have the embedded clause "dislocated".

- (17) a. John told me that the water was cold
b. That the water was cold John told me

Both the above examples are grammatical. The following Armenian examples contrast with the English data in that the example with the left dislocated CP is ungrammatical.

- (18) a. sirane indz asel e vor djure saren e
Siran me told is that water-the cold is
b. *vor djure saren e sirane indz asel e
That water-the cold is Siran me told is

Thus, it seems that adjunction to IP is not a possible explanation for the word order in the examples with embedded clauses.

On the other hand, evidence from indefinites suggests that the case resistance principle is irrelevant in this case because elements which appear to the right of the verb do not seem to get case. Consider the following example:

- (19) sirane mi katvi/*katvi gerkel e
Siran one cat-acc/*cat-acc holding is
"Siran is holding a cat"

Bare indefinites do not get structural case. As the above example shows only the quantified indefinite can get structural accusative case. An important fact about indefinites is that they also trigger auxiliary movement. I shall argue in chapter 4, that this is not the same type of movement that we see with focussed elements. For now, let us simply examine the data which are relevant to this chapter. Bare indefinites always trigger auxiliary movement when they appear to the left of the verb. Consider the following examples:

- (20) a. * sirane katu gerkel e
Siran cat holding is
- b. sirane katu e gerkel
Siran cat is holding

As the examples show it is not possible to leave the auxiliary with the verb when there is a bare indefinite object in the structure. Notice also that the indefinite in this case has no overt case marking, unlike definite objects.

(21) sirane katvin gerkel e

Siran cat-acc-the holding is

So bare indefinites which do not get structural case always trigger auxiliary movement when they appear to the left of the verb. On the other hand let us consider quantified indefinites which may get structural case but also have the option of not getting structural case. If this option is chosen the auxiliary has to move.

(22) a. sirane mi katvi gerkel e

Siran one cat-acc holding is

b. sirane mi katu e gerkel

Siran one cat is holding

c. * sirane mi katu gerkel e

Siran one cat holding is

Notice also that the auxiliary cannot be moved if the indefinite is case marked (unless it is focussed).

(23) * sirane mi katvi e gerkel

Siran one cat-acc is holding

It is clear from these examples that the auxiliary moves with (unfocussed) indefinites only when no structural case

is assigned to them. If however, indefinites appear following the verb, they do not carry the auxiliary, as shown in the following examples:

- (24) a. sirane gerkel e mi katu
 Siran holding is one cat
- b. * sirane gerkel mi katu e
 Siran holding one cat is

This is also true for bare indefinites.

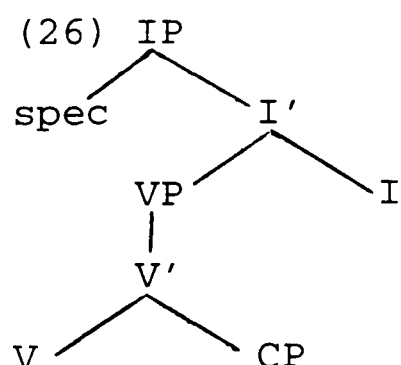
- (25) a. sirane gerkel e katu
 Siran holding is cat
- b. * sirane gerkel katu e
 Siran holding cat is

We have already seen that indefinites cannot be scrambled (see examples (42) and (43) in chapter 1), so it cannot be the case that these indefinites are adjoined to some maximal projection. Furthermore, assuming adjunction to a maximal projection would not explain why indefinites do not get case when they follow the verb and there is no auxiliary movement, but they necessarily get case when they appear in a pre verbal position (see chapter 4). This also rules out adjunction to VP, because if say indefinites could adjoin to VP, they should be able to appear

preverbally with no case. On the other hand, if we assume that the verb assigns case only to elements which appear to the left of V', then we do not need an adjunction analysis for embedded clauses. If the embedded clause remains in situ there will be no violation of the Case Resistance Principle because it will not receive case.

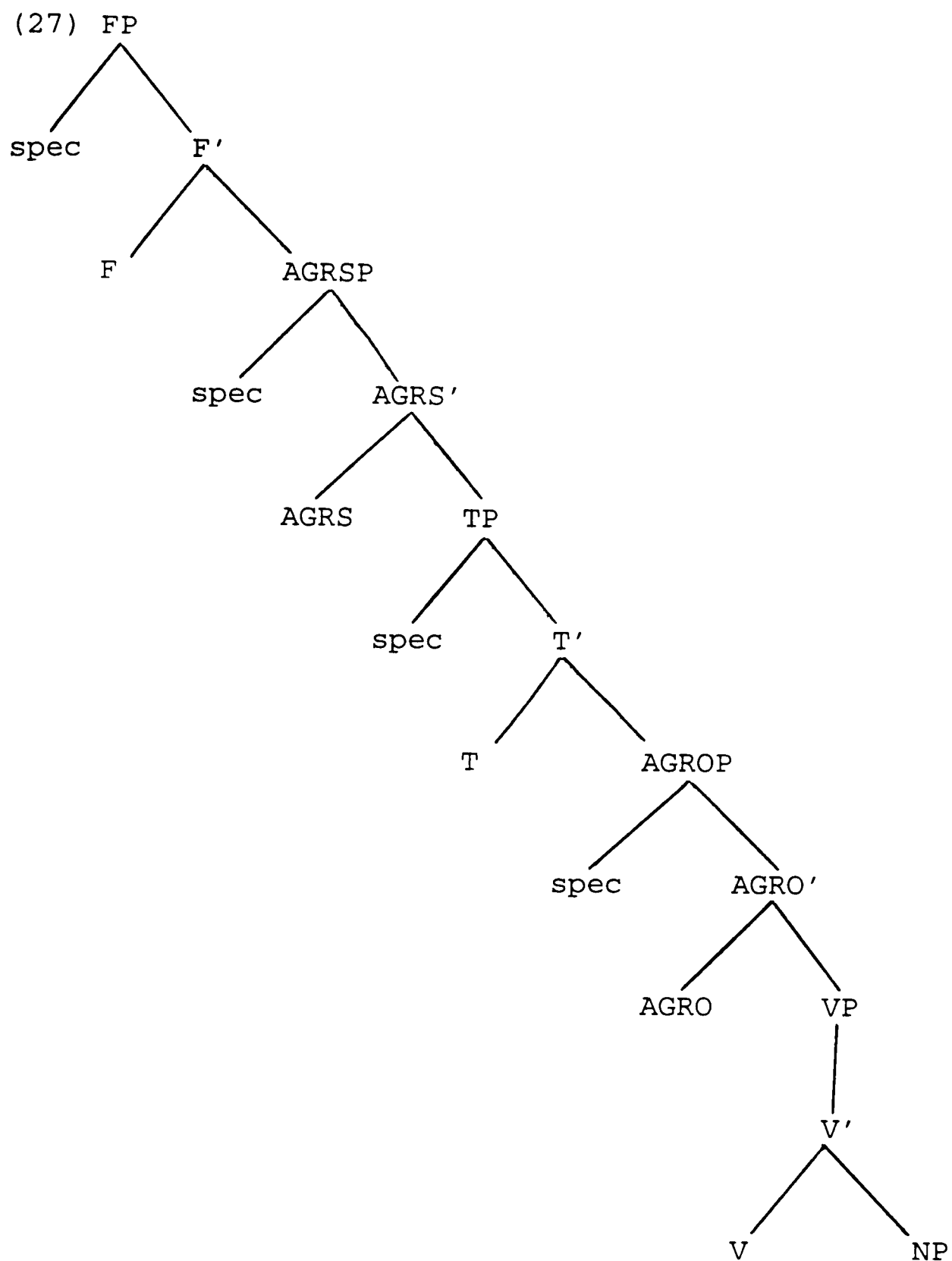
The evidence given above seems to suggest that embedded CPs and indefinites following the verb are in situ.

Thus it seems that at least these two classes of elements are projected to the right of the verb. If this is the case, then the structure of the sentence will be the following.



3.1.1. A SPLIT INFL ANALYSIS

Chomsky (1991) following Pollock (1990) argues for a split INFL structure. He assumes two Agr(eement) phrases and a T(ense) phrase. Let us adopt this structure for the Armenian clause assuming uniform head initial projections for both lexical and functional categories.



The evidence suggests that as in the case of Dutch, discussed in Zwart (1993), the Armenian VP is head initial. The SOV word order is a result of the fact that the direct object is licensed in the spec of AGRO position for case reasons. Thus, with a head initial VP and AGROP both the SOV order and the position of the embedded clause and non-

case marked indefinites can be explained in the following way. The position of indefinites and embedded clauses indicates that the complements of the verb are projected to the right of the verb. Those elements which need their case to be checked (all case marked elements) have to move to the spec of AGRO to have their case checked. Embedded clauses on the other hand, do not need to move because they do not have case (indefinites will be discussed in detail in chapter 4). This analysis correctly predicts that elements which do not get case will follow the verb. As the examples show this is in fact true. CPs and indefinites with no case do appear following the verb. So the Case Resistance Principle is also not needed. Notice that the fact that in declaratives the auxiliary follows the verb is not a problem here because, as mentioned before, the auxiliary is affixal. Thus, it is not necessary to assume a functional head to the right of VP. In this way we get a uniform head initial system for all categories in Armenian.

One further piece of evidence for the analysis suggested above comes from the consideration of parasitic gaps. If this analysis of the SOV languages is correct, then it must be the case that in SOV languages such as Armenian the object is always in non-root position. In other words, this means that there will always be a gap in the structure which could license parasitic gaps. Thus, even in declaratives the construction of parasitic gaps should be possible. It is well known that in Dutch

declaratives parasitic gaps are allowed. The same is also true for Armenian. Consider the following examples.

- (28) a. sirane ais girkere arants gardalu patvirets
 Siran this books without reading ordered
 "Siran ordered these books without reading
 them"
- b. sirane vor girkere arants kardalu patvirets
 Siran which books without reading ordered
 "Which books did Siran order without
 reading"

Both examples are grammatical in Armenian which seems to suggest that parasitic gap constructions are possible in declaratives in this languages providing further evidence to show that objects appear in non-root position of their chain in order to get their case¹⁶.

¹⁶Note that this analysis for the clause structure means that in examples with adverbials, as in those shown in the text and repeated here, the adverbial is attached to AGROP rather than the VP.

sirane banaliov dure batsum e
Siran key-with door-the opening is

CHAPTER 3

In this chapter I shall discuss multiple wh constructions in Armenian in both simple matrix clauses and embedded clauses. The chapter is organized as follows. In the first section I shall summarize the analysis given for multiple wh constructions in some slavic languages in Rudin (1988). Then, I shall consider Wh-phrases in simple clauses in Armenian, and I shall argue that in these constructions one Wh-phrase, namely the one which is the head of the spec FP, is in situ, and the rest are adjoined to IP. In section 3 I shall consider multiple Wh constructions in embedded clauses in Armenian, and will give evidence to show that it is not possible to Wh-move elements out of the minimal tensed clause in which they occur. In other words, wh-movement in Armenian seems to be clause bound. I shall argue that Wh-phrases are licensed only in their minimal clause and therefore must remain there.

1. RUDIN (1988)

Let us consider some proposals made in Rudin (1988) concerning multiple wh constructions in some slavic languages, before examining the Armenian data.

Rudin deals with multiple Wh constructions in five languages: Polish, Czech, Serbo-Croatian, Bulgarian and Romanian. In all five languages there is overt multiple Wh

fronting. She argues that in Bulgarian and Romanian all Wh-phrases are moved to the spec of CP and form a constituent, therefore other elements such as clitics, adverbs etc. cannot intervene between them. The following examples are from Bulgarian.¹⁷

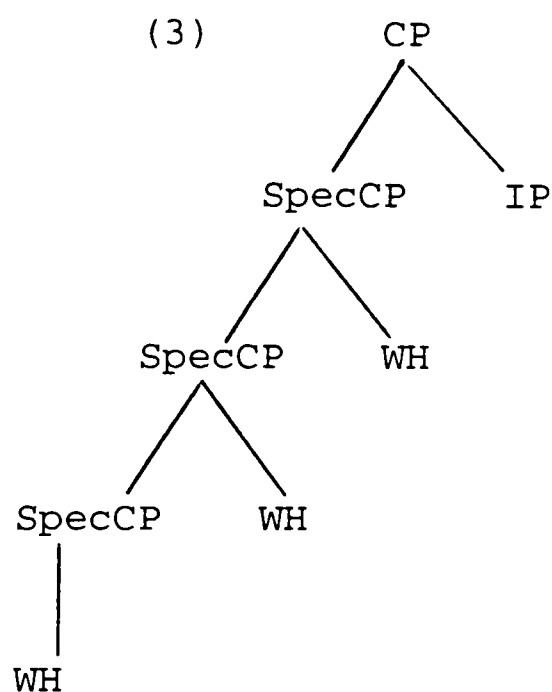
- (1) a. zavisi ot tova, koj kogo pruv e undaril.
 depends on this who whom first has hit
 "It depends who hit whom first"
- b. * zavisi ot tova, koj pruv kogo e undaril.
 depends on this who first whom hit

On the other hand, Polish, Czech and Serbo-Croatian allow other elements to intervene between the moved multiple Wh-phrases at S-structure. The following examples are from Czech.

- (2) a. kdo, podle tebe, co komu dal?
 who according to you what to whom gave
 "Who, according to you, gave what to whom"
- b. kdo co, podle tebe, komu dal?
 who what according to you to whom gave

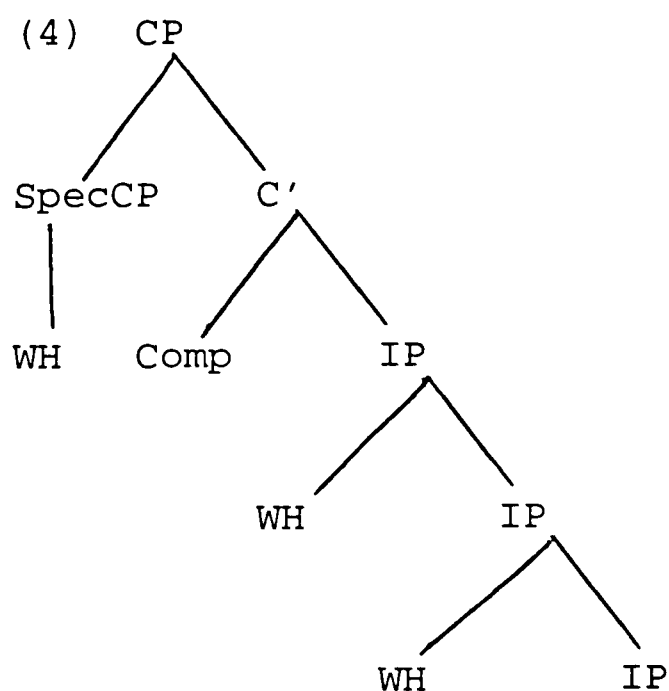
¹⁷ all the examples in this section have been taken from Rudin(1988).

Rudin divides these five languages into two groups, and proposes that in the case of Romanian and Bulgarian one Wh-phrase is substituted into the spec CP position and becomes the head of the spec CP, and the other moved Wh-phrases are adjoined to the spec of CP. The structure that Rudin gives for Romanian and Bulgarian is the following.



She calls languages with this structure +MFS (Multiply Filled Spec of CP) languages, and assumes that adjunction is to the right and all Wh-phrases appear in CP overtly. This structure gives an explanation for the fact that Wh-islands can be violated in these languages. The fact that the Spec of CP can be adjoined to overtly, makes it possible for Wh-phrases to move long distance by using the spec CP of the lower clause as an escape hatch, even if there are other Wh-phrases in this position. Polish, Czech and Serbo-Croatian are considered to be -MFS languages where adjunction to the spec of CP is ruled out. Multiple

Wh constructions in these languages follow a different pattern. Although, as in the case of +MFS languages, in these languages all Wh-phrases do appear in non-root positions, they do not all move to the spec of CP. Rudin argues that in these languages one Wh-phrase occupies the spec of CP position and the rest are adjoined to IP. Having such a structure will then account for the fact that it is not possible to violate Wh-islands in these languages. Unlike the +MFS languages, it is not possible to adjoin to the spec of CP in these languages, so it is not possible for Wh-phrases to move through the spec of a CP which is already filled by a Wh-phrase, therefore long movement of Wh-phrases is ruled out. The following is the structure Rudin gives for -MFS languages.



Notice that one consequence of having Wh-phrases adjoined to IP is the fact that the Wh-phrases can occur in any order in these languages. In other words, there is no

superiority effect concerning the subject and the object of the clause. This is not the case in +MFS languages. Here the nominative Wh-phrase must always precede the accusative or the structure will be ungrammatical. Consider first the following examples from a +MFS language, namely Bulgarian.

- (5) a. koj kakvo pravi
 who what does
 "who is doing what"
- b. * kakvo koj pravi
 what who does
 "What is who doing"

The following examples are from a -MFS language (Serbo-Croatian).

- (6) a. ko koga vidi
 who whom sees
- b. koga ko vidi
 whom who sees

Rudin argues that the reason for this difference between +MFS and -MFS languages has to do with the fact that in -MFS languages there is an intermediate trace in the structure which binds the trace in subject position. Her argument goes as follows.

She adopts the version of ECP proposed in Aoun et al (1987), where wh traces must satisfy a local binding condition at LF as well as a Head government condition. The condition which is crucial here is the binding condition which is given as the following.

- (7) An A' anaphor must be A' bound in its domain (atLF).

She then defines a domain as:

- (8) The domain for an expression A is the first clause (IP or CP) or NP which contains an accessible SUBJECT for A, where SUBJECT= AGR, [NP, IP], or [NP, NP] (Chomsky 1981) and where B is accessible to A iff A is in the C-command domain of B and assigning the index of B to A would violate neither the i-within-i condition, nor Binding condition C (The condition that R-expressions must be A-free).

Following Aoun, Hornstein and Sportiche (1980) and Lasnik and Saito (1984) she assumes that the first Wh-phrase which is moved to the spec of CP becomes the head of spec CP and thus gives its index to the spec of that CP. The spec then passes the index onto the head C. Thus, in +MFS languages where all Wh-phrases are in the spec of CP overtly, the spec will be indexed by the first Wh-phrase which moves into it. So, in the grammatical case where the

nominative Wh-phrase becomes the head of the spec CP, the head C of the entire CP is also coindexed with it and therefore it is able to bind the trace in subject position because of this coindexation. This applies to both types of language that Rudin discusses. On the other hand, if the accusative Wh-phrase moves to the spec CP first we get an asymmetry between the two types of languages. In +MFS languages this will create ungrammaticality for the following reason. The head of CP will be coindexed with this element and after the movement of the nominative Wh-phrase the trace will not be bound by C because of the lack of coindexation. It will not be governed either because the Wh-phrase will not be able to C-command it from a position adjoined to the spec of CP. In -MFS languages however, this order of movement will not cause ungrammaticality because of the fact that Wh-phrases adjoin to IP. Thus, it is the accusative Wh-phrase which moves to the spec of CP first in these languages, the head of CP gets coindexed with it in exactly the same way as with +MFS languages. The other Wh-phrases however, are adjoined to IP and when they move to the spec of CP at LF they leave a trace in the IP adjoined position. Thus even if C is not coindexed with the trace in subject position, the IP adjoined traces will be able to bind the trace in subject position, because the subject has the entire CP as its domain and the IP adjoined trace is coindexed with the subject trace in this domain and so it can bind it from this position. So, having Wh-phrases adjoined to IP will provide a straightforward explanation

for the lack of superiority effects in -MFS languages where the two examples have the following structures.

(9) a) [specCP_i[ko_i]koga_j] [Comp_i] [IP t_j[IP t_i..t_j..]]

b) [specCP_j[koga_j]ko_i] [Comp_j] [IP t_i[IP t_i..t_j..]]

2. MULTIPLE WH CONSTRUCTIONS IN ARMENIAN SIMPLE SENTENCES

2.1. TOWARDS AN ANALYSIS

In this section I shall be considering multiple WH constructions in Armenian. I shall argue that in this language Wh-phrases all form chains with expletives in FP and the Wh-phrase which is a member of the chain including the expletive in the head of the spec FP appears in situ. The other Wh-phrases which are adjoined to the spec of FP at LF appear in positions adjoined to IP. I shall argue that IP adjunction is a requirement for the licensing of Wh-phrases as foci.

I have already argued that whenever there is only one Wh-phrase in a sentence it appears in situ. (The crucial examples had to do with indefinite Wh-phrases). In multiple Wh constructions only one Wh-phrase seems to be in situ. The fact that this element bears the auxiliary suggests that it forms a chain including a position where the auxiliary can cliticize onto it. In other words, the evidence from both single and multiple Wh constructions

seems to show that the element with which the head of FP is in a spec-head relation, gets the auxiliary cliticized onto it and appears in situ.

Let us now consider those Wh-phrases which do not have the auxiliary cliticized on them.

In multiple WH constructions, there are certain restrictions on the ordering of the Wh-phrases which is not expected if we consider all Wh-phrases to be in situ. Let us first examine cases where there is no restriction. This happens when the Wh chains have their roots in argument positions.

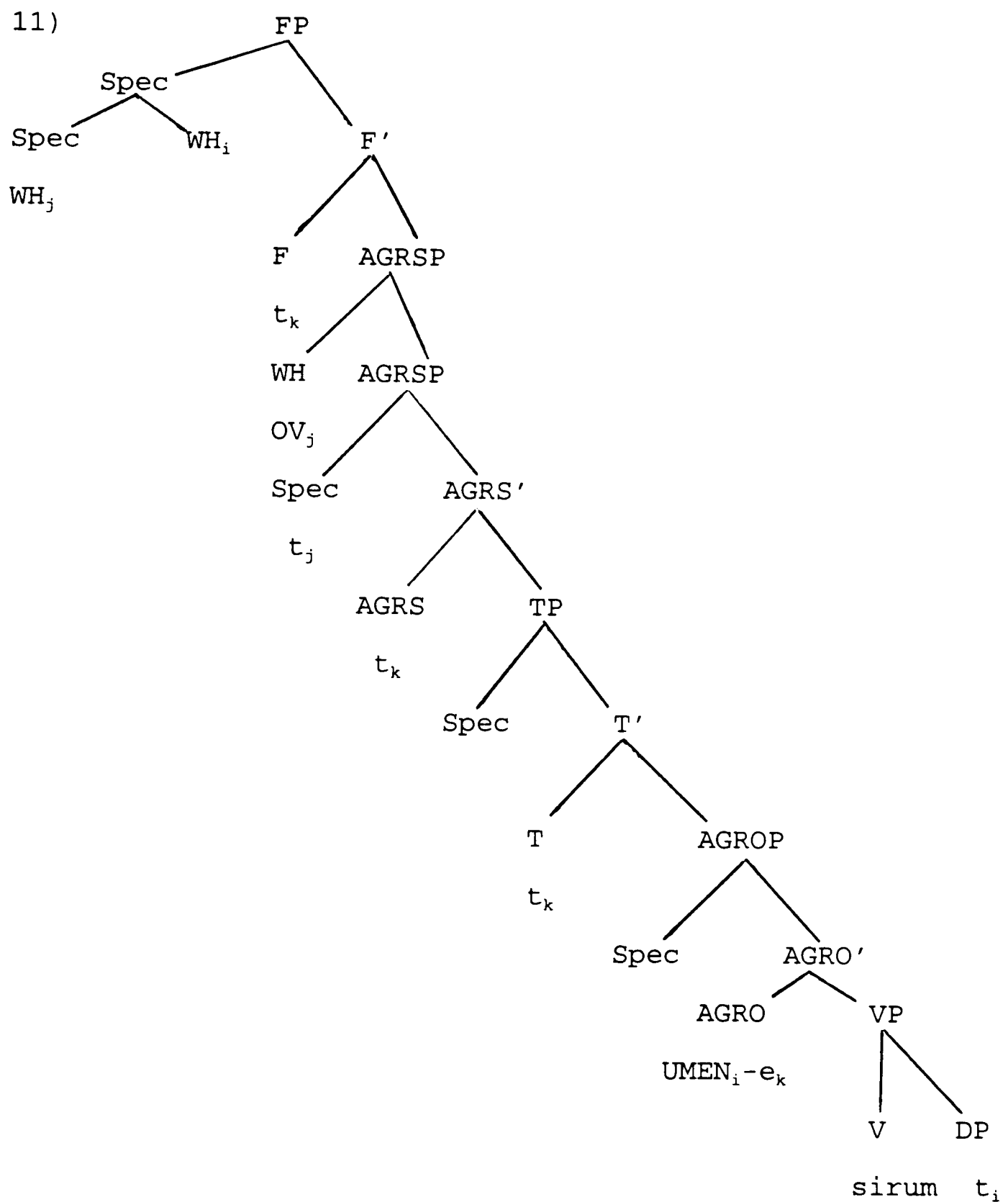
(10) a. ov umen e sirum ¹⁸
 who whom is liking
 "Who likes whom"

 b. ume ov e sirum
 whom who is liking

Notice that the grammaticality of the first example indicates that the links in the subject chain must be governed (or bound) by an element other than the expletive

¹⁸The fact that in example (a) the object Wh-phrase has a [n] has a phonological reason. Because of the fact that the auxiliary is incorporated on it, and the Wh-phrase ends in a vowel, a [n] is added to the end of the first element (namely the Wh-phrase) to avoid the two vowels appearing in adjacent positions within the same complex (the Wh-phrase and the incorporated auxiliary).

in the Spec of FP, because in this example it is the object Wh-phrase which is followed by the auxiliary. This suggests that the object is the element which is the head of Spec FP, because the element which carries the auxiliary always has to be the head of the spec of FP. It follows that spec FP is not coindexed with the subject Wh-phrase. This is a case similar to the -MFS languages discussed in Rudin, where an intermediate trace, or in the framework used here the Wh-phrase is adjoined to IP at LF, and it binds the trace in subject position. The domain of the subject trace being the entire FP the ECP will be satisfied. So the structure will be the following.



Now consider the following example which has an additional adjunct Wh-phrase.

- (12) ov ume inchkan e sirum
 who whom how much is liking
 "How much does who like whom"

Having said that the element which bears the auxiliary is the element which is the head of Spec FP, it is clear that this element in this case is the adverb "how much". Because of the fact that the adjunct Wh-phrase is the "head" of the spec FP and the spec has the same index, its trace can be antecedent governed by it and the ECP will be satisfied. We can now predict that if the adjunct Wh-phrase is not the element bearing the auxiliary, there will be a violation of the ECP and the structure will be ungrammatical. This is in fact true. Consider the following examples.

- (13) a. * inchkan ov umen e sirum
 how much who whom is liking
- b. * inchkan ume ov e sirum
 how much whom who is liking
- c. * ov inchkan umen e sirum
 who how much whom is liking
- d. * ume inchkan ov e sirum
 whom who much who is liking
- e. ume ov inchkan e sirum
 whom who how much is liking

The only case where the structure is grammatical is when the adjunct is the last element in the sequence of Wh-phrases with the auxiliary cliticized onto it. Notice that the order of the other Wh-phrases is not relevant.

This is not an unexpected result. Considering the fact that adjunct traces must be antecedent governed by the Wh-phrase in FP, and assuming an indexing system similar to that given in Aoun Hornstein and Sportiche (1981), it follows that the links in the adjunct chain will not be properly governed unless its antecedent is the head of the spec FP. It follows that the adjunct must always be the element which carries the auxiliary in the structure. This will also correctly predict that it is not possible to have two adjunct Wh-phrases in the same clause.

- (14) a. * inchkan inchu es gerum
 how much why are-you writing
- b. * inchu inchkan es gerum
 why how much are-you writing

In such a structure there will always be an ECP violation because one of the adjunct Wh-phrases, not being coindexed with the spec of FP, will fail to govern its trace.

What seems to be striking about multiple Wh constructions is the fact that the auxiliary always occurs

with the last Wh-phrase.

- (15) * ov umen e inchkan sirum
who whom is how much liking

Notice that the ungrammaticality of this sentence could also be considered to be an ECP violation. The crucial examples therefore will have to be with Wh-phrases in argument position which do not depend on being the head of the spec FP in order to govern their traces.

- (16) ? ov e ume sirum
who is whom liking

The above example is definitely not an ECP violation. The relevant link in the Wh chain following the auxiliary will be properly governed by the expletive in FP nevertheless, the example is not perfectly grammatical. If however, the auxiliary follows the second Wh-phrase the structure will be grammatical as in (10a) repeated here.

- (17) ov umen e sirum
who whom is liking

Recall that if the traces of the elements preceding the auxiliary are properly governed, without needing to have their antecedent to be the head of the spec FP, they can alternate as long as they remain in a position

preceding the auxiliary as shown in (10b) repeated here.

(18) ume ov e sirum

whom who is liking

We know that at least one Wh-phrase, the one which bears the auxiliary, is in situ.

Consider again the following example.

(19) a. sirane *inch/inchen e banaliov batsum

Siran what/what-the is key-with opening

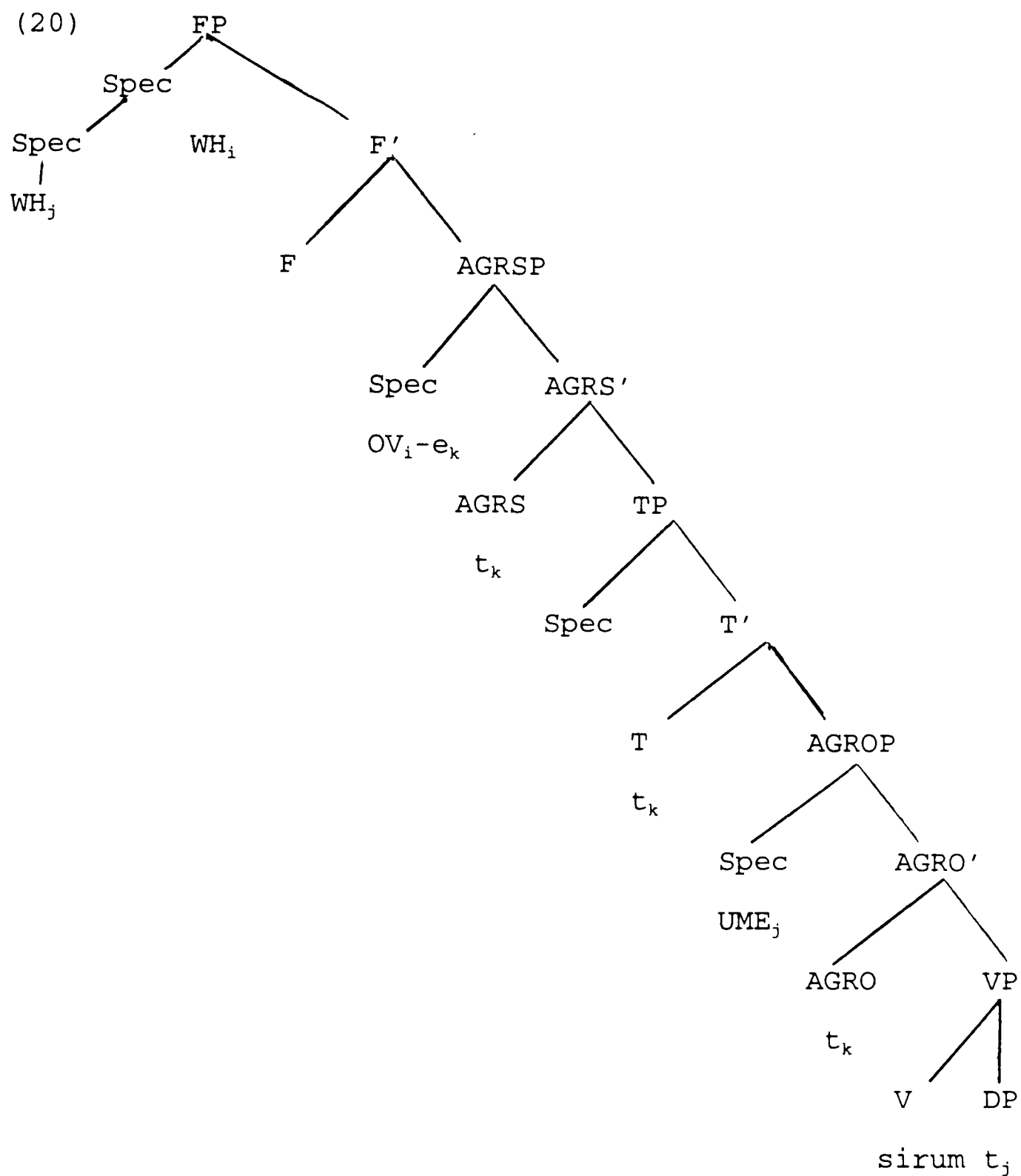
"What is Siran opening with a key"

b. sirane banaliov inch/inchen e batsum

Siran key-with what/what-the is opening

In example (19a), the indefinite Wh-phrase cannot occur in a position preceding the adjunct "with a key". The grammaticality of the second example indicates that the Wh-phrase must be in a position lower than the adjunct. In other words, the Wh-phrase must be in the object position. Indefinites cannot scramble and therefore the resulting structure is ungrammatical (indefinites are discussed in detail in the following chapter). However, it cannot be the case that all Wh-phrases are in situ, because if this were the case, then there should be no restriction on Wh-phrases occurring after the one bearing the auxiliary as in the

following tree.



The structure that this tree represents is that of (16) repeated here.

(21) ? ov e ume sirum
 who is whom liking

The object Wh-phrase is in situ following the subject Wh-phrase which bears the auxiliary, and the sentence is not perfectly grammatical.

If we assume that the Wh-phrases without the auxiliary always appear adjoined to IP and only the Wh-phrase with the auxiliary appears in situ, there will be no Wh-phrases following the one with the auxiliary (of course the definite Wh-phrase with the auxiliary can scramble as in the examples but this will create a marginally good structure). The reason for the Wh-phrases to adjoin to IP will be discussed in the following sections.

2.2. THE STRUCTURE OF MULTIPLE WH-PHRASES

To see further that in multiple Wh-constructions only the Wh-phrase bearing the auxiliary is in the root position of its chain, consider example (12) again, with multiple Wh-phrases.

(22) ov ume inchkan e sirum
 who whom how much is liking

In this example the Wh-phrases could all be in the root position of their chain. The position of "inchkan" (how much) is within the VP, therefore it could be the case that all three Wh-phrases are in root positions in the chain. The order of elements could be that of an in situ

structure. Examples such as the following however, show that the Wh-phrases cannot all be in the root position of their chain.

(23) ov ume vortegh e tesnelu
who whom where is seeing

The adjunct "vortegh" (where) is not a VP internal adverb so it must be in a position higher than the VP, while it is supposed to be the root of its chain. Then the object Wh-phrase should be following the adjunct if it appears in the root position of its chain. This order will result in a marginally good sentence as the following example shows.

(24) ?? ov vortegh e ume tesnelu¹⁹
who where is whom see-fut.

Notice that the order of elements in this sentence (apart from the auxiliary) is the same as the order that one gets in declaratives. So if the Wh-phrases were all in their root positions this example should be grammatical.

(25) sirane hamalsaranum surikin tesnelu e
Siran at college Surik see-fut. is
"Siran is going to see Surik at college"

¹⁹ The fact that this example is marked ?? is probably not due to a structural problem. It is just more difficult to process the scrambled structure because of the number of the Wh-phrases involved in this structure.

The following example is intended to show that the ungrammaticality of the previous example has to do with the position of the Wh-phrases with respect to the auxiliary. Unlike the above ungrammatical example, this one is grammatical because all Wh-phrases precede the auxiliary. Notice that the ECP is not violated here because "vortegh" is D-linked in the sense of Pesetsky (1987). That is, it is associated with a set of limited places that the speaker has in mind. The person asking the question knows that there are a number of specific places where someone should meet someone and wants to know at which specific place who meets whom.

(26) ov vortegh umen e tesnelu
 who where whom is seeing

The important fact here is that no Wh-phrase can occur in a position following the auxiliary.

As mentioned earlier, Wh-phrases in Armenian behave like those in the -MFS languages discussed in Rudin (1988). The Wh-phrases do not form a constituent. This can be shown clearly by examples such as the following where other elements intervene between the Wh-phrases.

(27) a. ov surikin yerb e tesel
 who Surik-acc when is seen
 "Who saw Surik when"

- b. ov surikin inchkan e sirum
 who Surik how much is liking

However in Armenian, unlike the -MFS languages of Rudin one Wh-phrase seems to be in the root position of the chain. This is the one which carries the auxiliary.

Let us assume that in Armenian, which would be classified as a -MFS language in Rudin's terms, the Wh-phrase bearing the auxiliary forms a chain with an expletive in the spec of FP and the other Wh-phrases form chains with a trace in the root position and an expletive adjoined to the spec FP. The auxiliary cliticizes onto the element which forms a chain with the abstract element in the spec of FP position. The lexical element of this chain (namely the Wh-phrase) appears in the root position of the chain, and the other Wh-phrases appear in positions adjoined to IP. This will account for the fact that the element bearing the auxiliary is always the last in the sequence of Wh-phrases. This is the element which appears in the root position of its chain in a position within IP, whereas the other Wh-phrases are adjoined to IP. If a Wh-phrase follows the one bearing the auxiliary, it means that this element is not adjoined to IP.

Notice that there are no superiority effects with respect to subjects and objects in Armenian. This might seem to provide evidence for the fact that the Wh-phrases

which are not the head of the spec FP at LF appear adjoined to IP. Recall that Rudin's -MFS languages also behave the same way.

However, this seems to cause some problems with respect to adjuncts. The problem being: If adjunction to IP can provide an "anchor" for binding relations (or antecedent government), then why is this option not available for adjunct Wh-phrases?

Let us examine the examples in (10) repeated here.

(28) a. ov umen e sirum
 who whom is liking

 b. ume ov e sirum
 whom who is liking

As the above examples show, there are no superiority effects with respect to the subject and object. However, as seen earlier, adjunct Wh-phrases cannot be in a chain which is not the head of the spec FP. Consider the following examples.

(29) a. ov inchpes e genum
 who how is going

- b. * inchpes ov e genum
 how who is going

The ungrammaticality of the second example shows that the adjunct trace is not properly governed while the subject trace seems to be properly governed even when the subject does not carry the auxiliary. Having said that the Wh-phrases not carrying the auxiliary are adjoined to IP, it seems that this adjunction does not provide a way to construct grammatical dependencies for adjunct Wh-phrases. Because of the fact that this is exclusive to the subject position, it seems that there is some other explanation for the phenomenon.

Let us consider the explanation that Rizzi (1990) gives for that-t effects and the absence of it in some languages and see if this could be extended to the absence of superiority effects in Armenian. Rizzi argues that if the subject trace is head governed by C, then there will not be a need for antecedent government. He argues that if I agrees with C, then C will be able to govern the subject position. Thus, the element in the subject position will have the same index as C because of the fact that the subject itself agrees with I and I agrees with C. Thus, in cases where there is "that" in the C position of the English embedded clause, it blocks the agreement between C and I, and therefore the subject position is not head governed by C. This is the reason why that-t effects are

seen in this language. Now consider the structure of the embedded clauses in Armenian. It was argued earlier that in Armenian embedded clauses there is both a CP and an FP. According to Rizzi, if the next higher head agrees with the inflexional head with which the subject agrees, then the subject position will be properly governed. Recall, that in Armenian focussed and interrogative structures, elements move to FP which is lower than CP. It has already been argued that the auxiliary forms a chain with an abstract element in F. This means that F, which is the next higher head from AGRSP, can head govern the subject position. The lack of that-trace effects and superiority effects can now be explained in a unified way. If the auxiliary is linked to F, then the subject position will be head governed which means that if the head of CP is filled with the complementizer, it will have no effect on the subject position. Also, if the presence of the auxiliary in the head of FP guarantees head government for the subject position, the prediction is that there will be no superiority effects because with interrogative constructions the auxiliary will always be linked to F governing the subject position.

Finally consider the following examples all of which are grammatical.

- (30) a. ov aisor ume inch e tevel
 who today whom what is given
 "Who gave what to whom today"
- b. ov ume aisor inch e tevel
 who whom today what is given
- c. aisor ov ume inch e tevel
 today who whom what is given

This also supports the claim that the Wh-phrases which are not the head of spec FP adjoin to IP and not in Spec FP, because if this was not the case, other elements such as adverbials could not intervene between the Wh-phrases . On the other hand, the fact that the following example is ungrammatical also supports the fact that the Wh-phrase bearing the auxiliary is in situ.

- (31) * ov ume inch e aisor tevel
 who whom what is today given

In these examples, the adverb cannot occur after the last Wh-phrase. Having said that the Wh-phrase bearing the auxiliary is in a chain root position, this is not a surprising result. The fact that example (31) is ungrammatical confirms that the Wh-phrase with the auxiliary is inside the IP. "Today" is a sentence adverb and therefore cannot occur in an IP internal position. So,

it is established that the Wh-phrase which carries the auxiliary is in situ whereas the other Wh-phrases are adjoined to IP.

3. "MOVEMENT" OF THE HEAD OF SPEC AND SPEC ADJUNCTS

Here, I shall summarize some of the main points in Cheng (1991).

3.1. CHENG (1991)

Cheng considers two types of languages: Those with Wh-particles for yes-no questions and those with no Wh-particles for yes-no questions. She observes that languages which have Wh-particles in yes-no questions do not have syntactic Wh-movement (ie. have their Wh-phrases in the root position of the Wh chains) . On the other hand those languages which have no particles for yes-no questions must have the Wh-phrases in non-root positions. She also observes that some languages such as Japanese and Korean can have the same particle in Wh-questions as well. She proposes that in languages with Wh-particles in yes-no questionsin, even where there is no overt Wh-particle, there is always a non-overt particle in C. In other words, she proposes that languages which have an overt yes-no particle necessarily also have a particle in Wh-questions. This particle may be overt or non overt. Thus, she proposes

the following generalization (Cheng's 6 p.24).

(32) In situ languages have Wh-particles, languages with Wh-particles are in situ languages.

To account for this fact she then proposes the following Clausal Typing Hypothesis (Cheng's 9 p. 30):

(33) Clausal Typing Hypothesis

Every clause needs to be typed. In the case of typing a Wh-question, either a Wh-particle in C is used or else fronting of a Wh-word to the spec of C is used, thereby typing a clause through C by spec-head agreement.

She proposes that there are two ways to type a clause. Some languages use overt Wh-movement to type the clause as +Q. Others, which have Wh-particles do not need to use overt Wh-movement for typing the clause because this is done by the particle which is base generated in C. Cheng points out that any language which has Wh-particles must use them because otherwise the principle of Economy of Derivation will be violated. She argues that base generating an element is costless; therefore, if a language has the option of using such an element to type the clause the Principle of Economy will prevent it from using the option of moving the Wh-phrase to spec CP because this process needs more effort.

3.2. THE WH-PARTICLE IN ARMENIAN

Let us now consider Armenian which does have question particles with yes-no questions as the following example shows.

- (34) artio^k sirane yekel e
Q Siran arrived is
"Has Siran arrived"

Note that this question particle "artio^k" can either be overt or non overt as shown by the following example which is also grammatical.

- (35) sirane yekel e
Siran arrived is
"Has Siran arrived"

Another fact about the Wh-particle in Armenian is that it doesn't seem to be base generated in the head position of FP. The presence of this element does not block the auxiliary "movement". However, if the particle was generated in the head of FP the movement of the auxiliary would be blocked. Consider the following example with a focussed DP.

- (36) artio^k SIRANEN e yekel
Q SIRAN-nom is arrived
"Is it Siran who has arrived"

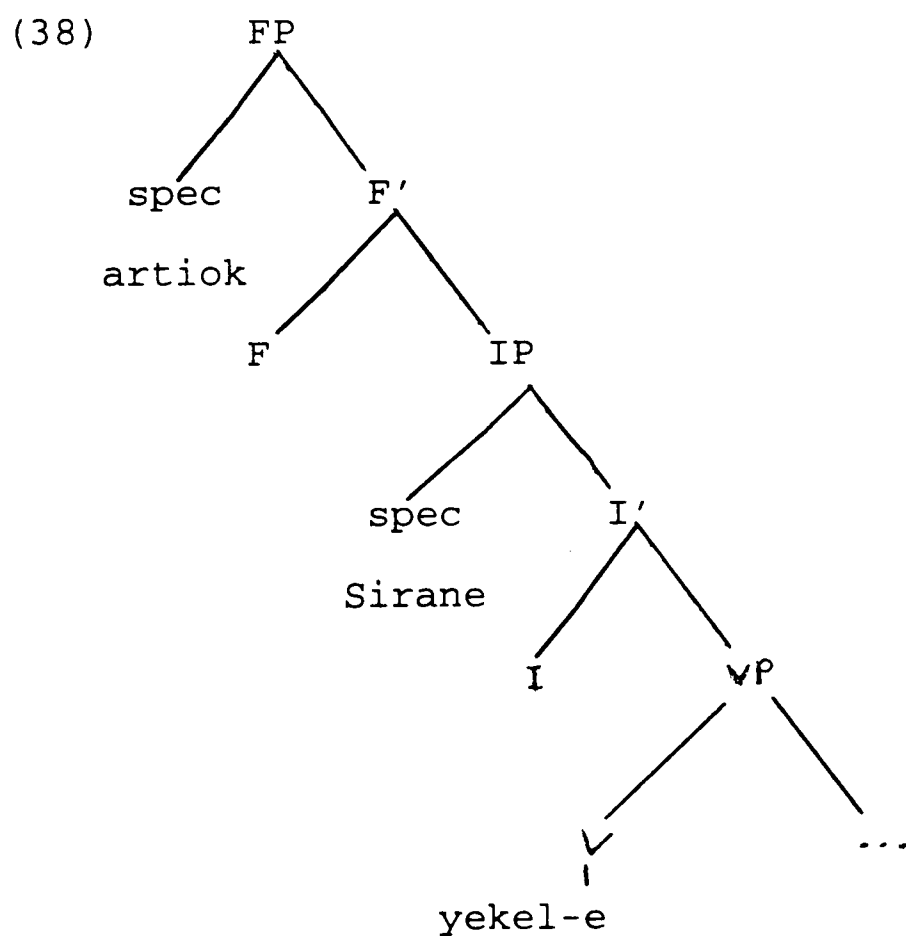
The grammaticality of this example suggests that the Wh-particle is not in the head F of FP. Given the fact that foci can cooccur with the Wh-particle it can be predicted that Wh-questions should also allow this particle and this is in fact correct. Consider the following example.

(37) artiok ov e yekel

Q who is arrived

"Who has arrived"

Thus, it seems that the question particle appears in a position other than the head of FP. The structure of the above example will then be the following.

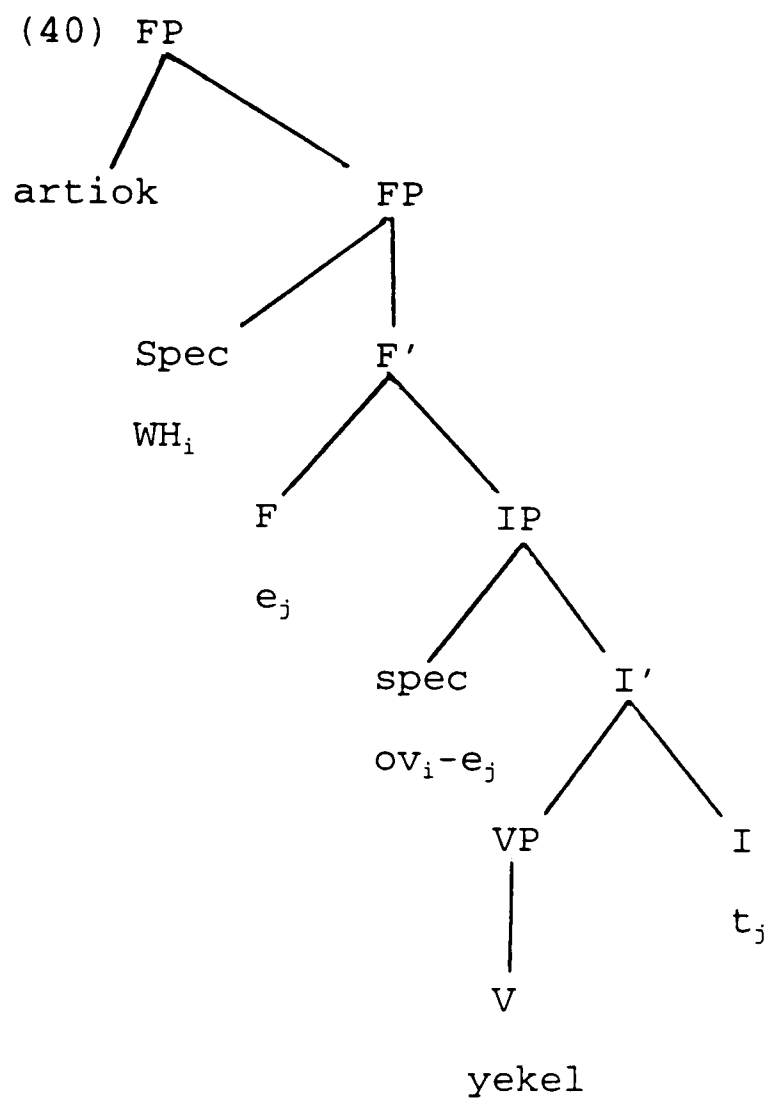


One question which arises at this point is the issue of index percolation in multiple Wh-constructions. It was assumed earlier (in chapter 1,) that the Wh-phrase in the head of spec FP gives its index to the whole FP by its coindexation with the head of FP through spec-head agreement. If the head of spec is occupied by the question particle in questions at all times (whether it is null or overt), then it would not be possible for the index of the element adjoined to the spec reach the head of FP in a spec head relation.

One possible answer to this question can be the following. The question particle is in fact an adverbial element adjoined to FP, and therefore plays no role in the indexing of FP. The fact that it is completely optional supports the claim that it is an adverbial element. Wh-phrases on the other hand, are related to the spec FP through the expletives which appear in the spec of FP and form chains with the Wh-phrases which appear in IP. Let us assume that these WH expletives are all adjoined to the spec.

(39) artiok ov e yekel

Q who is arrived



The comparison between the two examples given above will show that in cases where there is no Wh-phrase in the clause the Wh-particle does not trigger auxiliary movement. This follows if the Wh "Particle" is in fact no more than a +Q adverbial adjoined to FP.

The following example also shows that the Wh "Particle" is not a head.

- 41) uzum em imanal te artiok ov e jekel
 wanting am know_{inf.} if Q who is come
 "I want to know who has come"

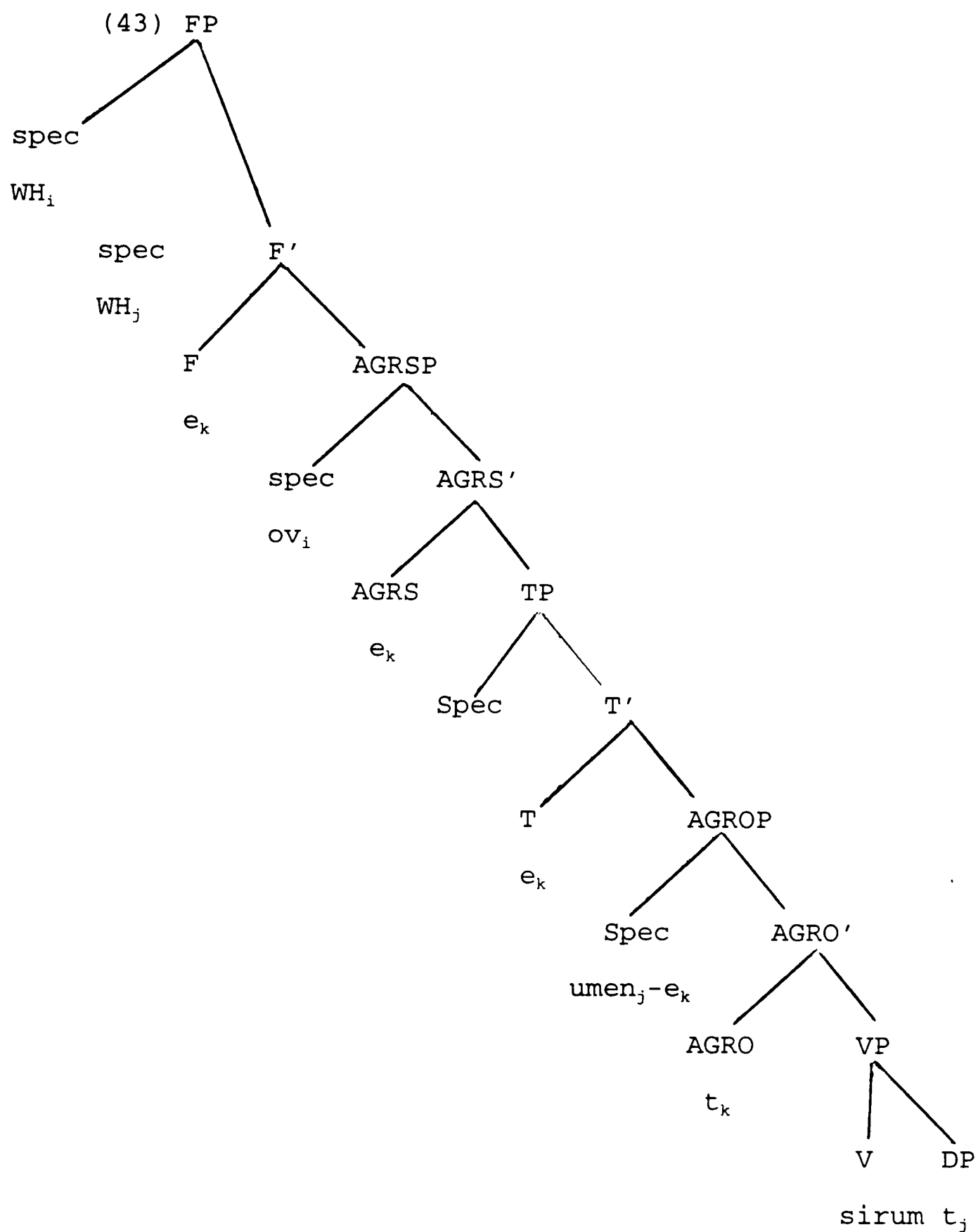
In the above example, there is a +wh complementizer which appears before the Wh particle and there is also auxiliary "movement" in the embedded clause. This suggests that the Wh particle is not in C or in F. This element could not be in the head of Spec of FP because this would block the spec-head relation of the Wh-chain and the auxiliary. On the other hand, it is not plausible that it is adjoined to the Spec FP because of the fact that adverbials do not adjoin to Spec positions. So, it must be the case that this element is adjoined to FP.

I shall argue that all Wh-phrases have to be licensed by a +f element, namely the +f head of FP (see below for discussion). This licensing requirement does not apply in the case of the Wh-particle, because it is not a Wh-phrase and therefore doesn't need to be licensed.

Finally the case of multiple wh-constructions needs to be considered.

Following McDaniel (1989), in multiple Wh-constructions the scope of the Wh-phrases is determined by expletive Wh-phrases in the Spec of FP. The structure will be the following.

(42) artiook ov umen e sirum
 Q who whom is liking



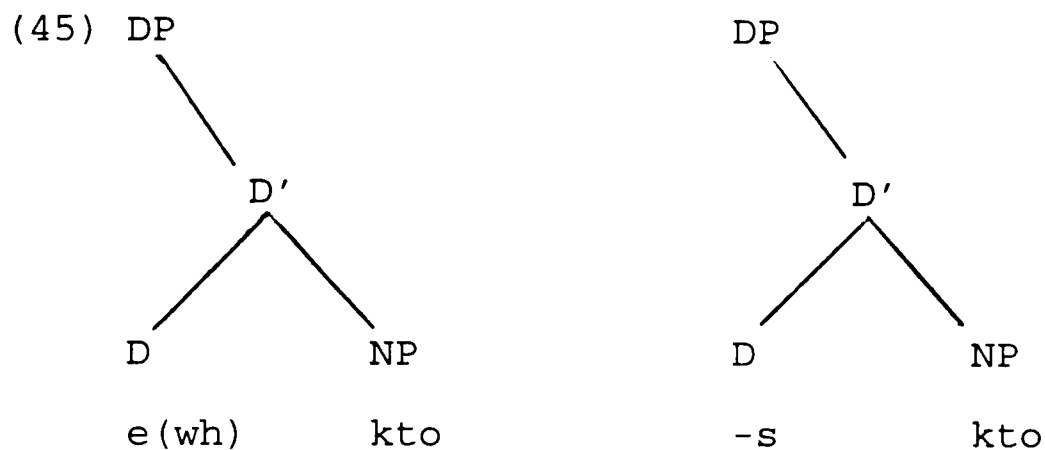
In the structure in (43), the object Wh-phrase appears in Spec AGROP and the subject Wh-phrase appears adjoined to AGRSP. The scope of both Wh-phrases is determined by the Wh expletives which appear in FP forming chains with the Wh-phrases.

One other property of Wh-phrases which concerns us here is the fact that they need to be licensed by a head. Cheng assumes that in languages with multiple Wh-movement such as Polish, all Wh-phrases need to be licensed by a +wh C. The movement of one Wh-phrase is sufficient in languages with no question particles to type the clause, it appears that the other Wh-phrases move for a quite different reason: Licensing. Thus, in multiple Wh-fronting languages all Wh-phrases have to be moved to a position where they can be licensed by the head of a +wh CP. This accounts for the fact that these languages have Wh-particles as well as overt Wh-movement. Cheng argues that in such languages the interrogative force of Wh-phrases is determined by a null determiner, and this determiner needs to be licensed by a +wh C. This licensing requirement makes the Wh-phrases appear in non-base generated positions. She shows that in these languages the Wh-words can also be used to form indefinites and concludes that these elements do not have interrogative force. Thus, in their interrogative use they get the interrogative force from the +wh determiner which binds them. For example in Polish the suffix -s attached to a Wh-word will form an indefinite.

44)

kto	who	ktos	someone
gdzie	where	gdzies	somewhere
kiedy	when	kiedis	sometime
jaki	what sort of	jakis	some sort of

Cheng argues that whenever the Wh-words appear without the suffix -s, there is a null determiner which gives them their interrogative force. She proposes the following structure for Polish Wh-words and indefinites: an analysis which can also be applied to Hungarian.



When the D position is filled with the suffix -s, the DP has an indefinite reading with no interrogative force. When there is an empty (wh) determiner in D, the DP is understood as a Wh-phrase. It is this null determiner which needs to be licensed and forces the Wh-phrase to appear in CP.

On the other hand in languages like Mandarin Chinese the bare form of Wh-words themselves can be used as indefinites as well as interrogative words.

46)

shei	who	anyone
sheme	what	anything

Cheng makes a distinction between the two types of languages by pointing out that multiple fronting languages always have a suffix with their Wh-words when forming the indefinite, while non-movement languages (eg. Chinese) have no suffix on the indefinites.

Wh-words in Armenian are ambiguous in the way Chinese Wh-words are. In other words, the bare form of Wh-words can either be used as indefinites or they can be used as proper Wh-phrases with interrogative force.

47)

ov	who	anyone
vore	which one	some of them
yerb	when	any time
vortegh	where	anywhere

These Wh-words do not have a polarity reading and the indefinite use is also restricted to certain contexts. On the other hand, it is assumed that all foci (interrogative or non-interrogative) must be licensed by the head of FP. This is the reason why all foci have to appear in positions which are governed by F (ie. Spec FP or adjoined to IP).

- (48) a. yerb es galu
 when are-you come-fut.
 "When will you come"

b. yerb vor uzes kegam

When that want-you will-come-I

"I'll come any time you want"

Cheng argues that in non-movement languages such as Chinese, which have ambiguous Wh-words, the overt question particle in interrogative constructions disambiguates the Wh-words. Notice that in Chinese the interrogatives always have an overt question particle which is base generated in the head of CP rather than its spec. In Armenian however, the Wh-particle, which is not the head of FP, being empty with respect to indices, cannot bind the Wh-phrases, so these phrases have to "move" to be licensed by the +f head of FP. Note that I use the general feature +f instead of Cheng's +wh because in Armenian not only Wh-phrases but all foci must appear in a position where they can be governed by the head of FP. But the question is, are Wh-phrases really focussed? I shall argue that, if Wh-phrases have the feature +f they will be interpreted as interrogatives and if they lack this feature they will fail to have interrogative force. The following examples confirm this.

(49) a. OV UMEN e sirum

WHO WHOM is liking

"Who likes whom"

b. OV e ume sirum

WHO is whom liking

Although both examples are grammatical the first one is a multiple question whereas the second one is a single question. In the second case only the focussed Wh-phrase has interrogative force. So, in the first case it is possible to answer with "John likes Mary" but this answer is not appropriate for the second example. In this case, the only interpretation which is available is that of an echo question and the answer is "John". The following is also ungrammatical.

(50) * OV e UME sirum
WHO is WHOM liking

The focussed object is not in a position which is governed by F therefore it is not licensed and the structure is ungrammatical.

I shall argue in the next section that this analysis can account for partial Wh-movement facts as well.

Given that the scope of Wh-phrases is determined by null operators which appear in the +wh FP, if there is an embedded clause which is not typed as +wh the Wh-phrases must have a binder in the spec of the higher FP. On the other hand, any head F of FP can license a +f element because FPs are always +f. The Principle of Economy then prevents the Wh-phrases from moving to the higher clause

because the FP in the embedded clause is able to license them and to appear in the higher clause requires a longer move.

To summarize, Cheng proposes the Clausal Typing Hypothesis to account for the difference in behaviour between languages with overt "Wh-movement" and those without overt movement. Thus, a clause which has Wh-phrases in it has to be marked as +Q. She argues that different languages use different ways to type their clauses. In languages which have question particles, this is done by the particle which moves to the head of CP/FP and marks the clause as +Q. In languages which lack such wh particles the marking is done by syntactic Wh-movement. Languages of the first type include Japanese and Mandarin Chinese, and the second type of languages include English. She also argues that multiple Wh-movement in clauses is due to the inherent properties of the Wh-phrases in different languages. She proposes that Wh-phrases in some languages need to be licensed by C overtly. She argues that this is the reason why more than one Wh-phrase has to appear in non-root positions.

According to Cheng's predictions, languages can be divided into the following groups. 1) those which have question particles and no syntactic "Wh-movement". 2) those which have no question particles and syntactic Wh

movement. English is a language with no Wh particles, so a Wh-phrase has to move into Comp in order to mark the clause as [+wh]. Cheng shows that the presence of only one Wh-phrase in Comp is enough to type the clause, therefore the other Wh-phrases remain in chain root positions according to the Principle of Economy of Derivation. On the other hand Japanese is a language with question particles and this is the reason why it does not have to have the Wh-phrases in Comp overtly. The Clausal Typing requirement is satisfied by the question particle which according to Cheng is generated under C. For languages such as Bulgarian or Polish which have overt multiple wh "movement" and therefore seem to be counter examples for the Clausal Typing Hypothesis, Cheng proposes the following solution. She argues that these languages have no question particles for yes/ no questions and therefore assumes that they have no phonetically null question particles either. She also suggests that such languages have a phonetically null [+wh] determiner in their Wh-phrases which needs to be licensed by a [+wh] C. The fact that all Wh-phrases are in non-root positions in such languages is then explained in the following way. The first one moves to Type the C as [+wh] through spec-head agreement, and the others move in order for their null determiner to be licensed. Cheng makes two predictions. First she predicts that languages with question particles have their Wh-phrases in root positions of the chains, and secondly she predicts that there are no languages which have both options of using a question

particle and Wh-phrases in Comp to type a clause. Notice however, that having made a distinction between clausal typing and wh-phrase licensing, it should be possible, in principle, to have an element typing the clause as [+wh], and also wh-phrases which need to be licensed independently. In other words, the first prediction that she makes does not follow from her analysis. Thus, the way she explains multiple Wh fronting languages, in fact does not rule out the possibility of having a language which would have a question particle and Wh-phrases with null determiners which need to be licensed. Thus, it does not rule out the possibility of having a question particle in C (or F) and Wh-phrases adjoined to IP in order to be licensed. This however, seems to be contrary to fact. It seems to be true that all languages with question particles have Wh-phrases in situ. Of course, it is possible to argue that the insertion of the particle and adjunction of all Wh-phrases to IP requires more effort because in this case all Wh-phrases must move in two steps at LF in order to appear in Spec CP, whereas if the clausal typing is done by the first Wh-phrase which moves to CP, then the Wh-phrase moves in one step and the clause is also typed. Recall that Cheng had argued that the fact that there is no "Wh-movement" in languages with Wh particles has to do with the Principle of Economy.

Let us now consider an alternative. Let us see how "Transparency" explains the facts. Using Transparency would

force us to say that in languages with no "Wh-movement" Wh-phrases are barred from appearing in a non-root position. The Clausal Typing requirement would then force such a language to insert another element in CP (or FP) to type the clause as +wh because the Wh-phrases cannot appear in CP (or FP) or any other non-root position. Thus, the existence of the Wh-particle will be considered to be a result of the fact that Wh-phrases cannot appear in non-root positions. This would automatically give us the complementary distribution between Wh-particles and Wh-movement.

The reason why Wh-phrases are not allowed to appear in CP (or FP) in languages such as Chinese can be seen as a lexical property of the Wh-phrases in these languages. In "Lexico Logical Form" Brody suggests that the fact that some languages have partial Wh-movement is a result of a lexical specification. In such languages, the Wh-phrases which are partially moved are specified as "- scope markers when in a potential scope position". This could also be extended to Wh-phrases in situ. So, in languages which have in situ Wh-phrases, all Wh-phrases are specified as "-scope markers". It will then follow that these Wh-phrases cannot appear in CP, because if they do they will not be able to mark their scope. This means that they will have to be associated to an expletive element in the Spec of CP/FP which would mark the scope of the Wh-phrase. Notice that in "in situ" languages, it is possible to scramble the Wh-

phrases. In other words, the Wh-phrases can appear in non-root positions. The restriction is that they cannot act as scope markers and therefore cannot appear in their actual scope position.

Conflating Cheng's interrogative specification of Wh-phrases and Brody's scope marking specification, which are both lexical properties of Wh-phrases, we can have four groups of languages. So if we consider Wh-phrases in every language to be specified as +/- with respect to these two properties, we get the following.

+wh	+scope marker	(English)
-wh	+scope marker	(Polish)
+wh	-scope marker	(Chinese)
-wh	-scope marker	(Armenian)

Thus, in English, Wh-phrases have their interrogative force lexically so they do not need to be governed by a +wh head to be licensed. They are also scope markers which means that they can appear in scope position. The fact that only one Wh-phrase can appear in a scope position overtly in English has to do with the independent -MFS property of English. Polish Wh-phrases on the other hand need to be licensed by C, therefore they have to be in a position where they can be governed by it. This makes them appear in CP and IP adjoined positions and because they are scope markers they can appear in such positions. In Chinese the

Wh-phrases are not scope markers therefore they cannot be in a scope position, they are however marked as +wh lexically through the incorporation of a certain affix. Finally Armenian seems to have the negative specification for both features. thus, Wh-phrases cannot be in a scope position but they need to be licensed by F, so they have to appear in positions where they will be governed by it. The one bearing the auxiliary appears in situ because the licensing is done through the incorporation of the auxiliary. The other Wh-phrases however, must appear adjoined to IP.

Let us now return to Armenian multiple Wh-constructions.

I argued earlier in this chapter that the Wh-phrases need to be governed by the head of FP in order to get interrogative force. This will then force them to appear in positions where they can be governed by F. These positions are the spec of FP and IP adjoined positions. Notice that one Wh-phrase is coindexed with the head of FP. This is the one onto which the auxiliary cliticizes. This Wh-phrase appears in the root position of its chain and it has the auxiliary (a +f element) cliticized on it. On the other hand, the other Wh-phrases appear adjoined to IP overtly, because they need to be governed by F. So, the Wh-phrase bearing the auxiliary appears in the chain root position, because it is marked by the focussed auxiliary. The fact

that the auxiliary cliticizes onto it licenses the Wh-phrase as a [+f] element lexically and because of this licensing it blocks the Wh-phrase from appearing in FP. The other Wh-phrases on the other hand, need to be governed by the F. This is because they do not have this feature inherently and there are no [+f] elements which could cliticize onto them and mark them with this feature lexically, so they need to be in that syntactic position in order to be licensed.

Because clausal typing and Wh-licensing are independant processes, it is not surprising that the heads of the spec FP behave differently from those that are adjoined to the spec of FP. In *general* all those languages in which the head of spec FP appears in situ, either have question particles, which means that all Wh-phrases can be in situ, or have another way of marking the head of the spec as [+wh] lexically, eg. by the cliticization of the auxiliary.

4. EMBEDDED WH CONSTRUCTIONS

4.1. SINGLE WH PHRASES

4.1.1. DATA FROM TENSED CLAUSES

In this section I shall present data from embedded wh constructions with only one wh-phrase in the embedded clause, and will show that the embedded FP needs to be

filled by the Wh-phrase in the embedded clause.

Consider now the following examples.

(51) a. sirane asets vor surike arain tesel e
 Siran said that Surik Ara seen is
 "Siran said that Surik has seen Ara"

 b. sirane asets vor surike umen e tesel
 Siran said that Surik who is seen
 "Who did Siran say that Surik has seen"

As in the case of matrix Wh-movement, the Wh-phrase in example (51b) above is definitely in a chain with a link in a position where it was able to receive the auxiliary as a clitic. The obvious position is the spec of FP. However notice that it is the auxiliary in the lower clause which has cliticized onto the Wh-phrase. This means that the F governing the Wh-phrase (Or an element in the chain of the Wh-phrase) is the embedded FP and not the matrix +wh FP. If however, the Wh-phrase moves to the matrix clause, with or without the auxiliary, the resulting structure will be ungrammatical as shown by the following examples.

(52) a. * sirane umen asets vor surike tesel e
 Siran who said that surik seen is

- b. * sirane umen e asets vor surike tesel
 Siran who is said that surik seen

I suggest that the reason for the ungrammaticality of the above examples is the following. I have argued earlier that Wh-phrases need to be +f elements in order to be interpreted as interrogative. I have also said that the head of every FP can assign this feature to elements which either appear in the spec of FP or in positions which are governed by F (ie. the IP adjoined position). Brody (1993) proposes that in the LLF theory partial Wh-movement can be seen as a result of a lexical property of the Wh-phrases in different languages. He argues that Wh-phrases can be specified as having a +/- feature with respect to being able to act as scope markers. So, in English for example Wh-phrases are "+scope marker when in a potential scope position", and in German, where both long distance and partial Wh-movement exist this feature is optional. Notice that in Armenian, Wh-phrases are never in scope position which indicates that they are always "-scope markers". In the above examples the first FP available to the embedded Wh-phrase is the embedded one; therefore the Wh-phrases in the embedded clause could get their +f feature by forming chains one member of which is governed by the embedded F. Suppose this is not what happens and we have a structure such as the above (52a). In this example the Wh-phrase appears in the matrix clause. Notice that the Wh-phrase will have to appear in the spec of the higher FP because of

the licensing requirement. This means that it will have to be in its scope position. However, being characterized as -scope marker, it will fail to have scope and the structure gets no appropriate interpretation. On the other hand, if the Wh-phrase appears in the lower FP, the licensing requirement will be fulfilled and there will be no problem with the scope marking because the null operator will ensure that the Wh-phrase has the right scope. In the second case the Wh-phrase appears in the matrix clause with the auxiliary of the embedded clause attached to it. Such a structure is impossible because if the Wh-phrase has the embedded auxiliary on it, it can never appear outside the original clause. This is because the auxiliary of one clause cannot appear in another clause.

Note that neither subjects nor objects are allowed to appear in positions outside the embedded clause. In the above examples it was the object which appeared outside its clause and in the examples which follow I have tried to extract the subject which also results in ungrammaticality.

- (53) a. sirane asets vor ov e arain tesel
 Siran said that who is Ara seen
 "Who did Siran say saw Ara"
- b. * sirane ov asets vor arain tesel e
 Siran who said that Ara-acc seen is

- c. * sirane ov e asets vor arain tesel
 Siran who is said that Ara seen

Adjuncts also behave in the same way. Consider the following examples.

- (54) * inchpes siranen asets vor surike dure norokets
 how Siran said that Surik door-the repaired
 "How did Siran say Surik repaired the door"

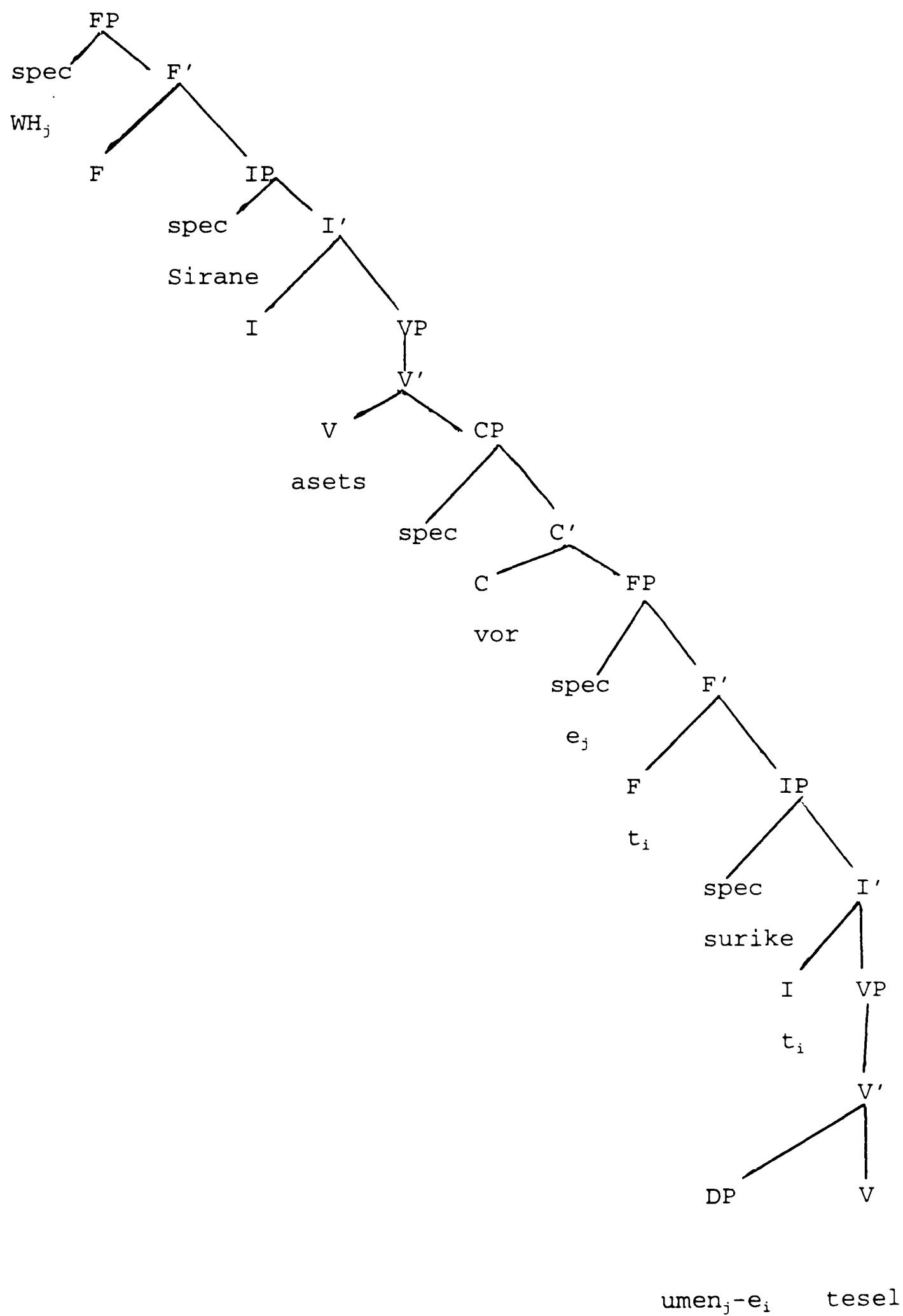
The presence or absence of the complementizer plays no role in the grammaticality of the examples. Thus if we reconstruct all the above examples without the complementizer, it will still not be possible to extract the Wh-phrases out of the embedded clause.

- (55) a. * sirane umen asets surike tesel e
 Siran who said Surik-nom seen has
 "Who did Siran say Surik has seen"
- b. * sirane ov asets arain tesel e
 Siran who said Ara-acc seen is

Perhaps it should be mentioned here that in all the above grammatical examples the Wh-phrase has matrix scope, as the glosses show. I have already argued that there is a

null scope marker in the spec of the FP from which the Wh-phrases take scope. The matrix scope of the Wh-phrases in the above examples is due to the null scope marker which appears in the matrix FP. The structure of the embedded Wh-constructions is given below (irrelevant details omitted).

(56) sirane asets vor surike umen e tesel



Here, because the spec of the embedded FP is not filled with a Wh-particle, the Wh-phrase can move to the spec to get the +f feature from the head of FP.

Now we should consider non-finite embedded clauses.

4.1.2. DATA FROM NON-FINITE CLAUSES

Wh-phrases in infinitives and subjunctives do not behave in the same way as those in tensed clauses. Extraction of the Wh-phrase bearing the auxiliary seems to be possible in these cases. Consider the following examples:

- (57) a. sirane uzum e surikin tesnel
 Siran wanting is Surik see-inf.
 "Siran wants to see Surik"

- b. sirane umen e uzum tesnel
 Siran who is wanting see-inf.
 "Who does Siran want to see"

However, the Wh-phrase can also remain in the embedded clause as shown by the following example.

- (58) sirane uzum e ume tesnel
 Siran wanting is who see-inf.

Although subjunctives do have tense, it is always dependent on the tense of the matrix clause. They can however have independent AGR features. This suggests that the inflexion of subjunctives is not completely anaphoric. Consider the following examples.

- (59) a. sirane uzum e vor surike girke beri
 Siran wanting is that Surik book-the bring-sub.

"Siran wants Surik to bring the book"

- b. sirane inchen e uzum vor surike beri
 Siran what is wanting that Surik bring-sub.

"What does Siran want Surik to bring"

Notice that in this case as well as in the case of the infinitives, it is possible though not obligatory to have the Wh-phrase in the matrix clause.

- (60) sirane uzum e vor surike inche beri.
 Siran wanting is that Surik what bring-sub.
 Same

4.1.3. PARALLELS WITH FOCI

It has already been shown (in chapter 1)
 that focussed non-Wh elements also show exactly the same

extraction properties. Consider the following examples with embedded clauses which also show that extraction out of tensed clauses is also impossible for non-wh foci.

- (61) a. siranen asets vor SURIKEN e arain tesel
 Siran said that SURIK is Ara-acc seen
 "Siran said that it was Surik who saw Ara"
- b. * sirane SURIKE asets vor arain tesel e
 Siran SURIK said that Ara-acc seen is
- c. * sirane SURIKEN e asets vor arain tesel
 Siran SURIK is said that Ara-acc seen

With subjunctives and infinitives however, as in the case of Wh-phrases, it is possible to extract foci from the embedded clause.

- (62) a. sirane uzum e SURIKIN tesnel
 Siran wanting is SURIK to see
 "It is Surik that Siran wants to see"
- b. sirane SURIKIN e uzum tesnel
 siran SURIK is wanting to see
- c. sirane uzum e vor SURIKE girke beri
 Siran wanting is that SURIK the book brings

- d. sirane SURIKIN e uzum vor girke beri
 Siran SURIK-acc is wanning that the book
 brings

Notice that like the Wh-elements, in subjunctives focussed subjects also get accusative case from the matrix verb when they appear in the matrix clause. Thus, it seems that exactly the same processes take place with foci and with Wh-phrases which goes to show that it is not implausible to consider Wh-phrases as a subcase of foci. I shall argue in the following sections that the reason why subjects cannot be extracted from subjunctives has to do with the nature of the subjunctive inflexion which is neither fully independent nor fully anaphoric.

4.1.4. MULTIPLE WH PHRASES IN EMBEDDED CLAUSES

Consider the following example:

- (63) * ov e sirane asum vor girken e kardalu
 who is Siran saying which book is reading
 "Who is siran saying is reading which book"

It might be possible to attribute the ungrammaticality of this example to the fact that the Wh-phrase in the matrix clause has crossed a Wh-island. This cannot be true however, because it was shown earlier that the subject trace is properly governed and there is no asymmetry

between the subject and the object trace with respect to government. Furthermore, as the following example shows, it is not possible even to extract the object from the above embedded clause.

- (64) * vor girken e sirane asum ov e kardalu
which book is Siran saying who is reading

Not surprisingly, the same results are also obtained with adjuncts.

- (65) * yerb e sirane asum vor girken e kardalu
when is Siran saying which book is reading-fut.

The following example is grammatical.

- (66) sirane kartsum e vor ov e aradjin linelu
Siran thinking is that who is first be-fut
"Who does Siran think will win the first prize"

The fact that in the grammatical example the auxiliary in the embedded clause is cliticized onto the Wh-phrase indicates that there is partial Wh-movement involved, because in order for the auxiliary to cliticize onto the Wh-phrase, one member of the Wh-chain has to be governed by the embedded F. On the other hand, the Wh-phrases in the grammatical case has matrix scope which indicates that there must be an element in the matrix FP which creates

that scope. I shall assume that there is an empty expletive in the matrix clause coindexed with the Wh-phrase in the embedded clause which acts as a scope marker for the Wh-phrase²⁰. Before doing so however, I shall present data from a language with overt scope markers and partial Wh-movement. The data is from Ruhr German.²¹

4.2. PARTIAL WH MOVEMENT

4.2.1. RUHR GERMAN

Consider the following examples from Ruhr German.

- (67) a. Was glaubt Hans mit wem Paul t nach Berlin
fährt
what believes Hans with whom Paul to Berlin
goes
- b. Was glaubt Hans wen Paul t anruft
what believes Hans whom Paul phones

In these examples, the Wh-phrase in the higher clause is the scope marker for the Wh-phrase in the lower clause, which cannot move out of the embedded clause itself as the following ungrammatical example shows.

²⁰ This follows from the LLF theory and was suggested to me by M. Brody.

²¹ I would like to thank Stefanie Anyadi for the German data.

- (68) * wen glaubt Hans dass Paul t anruft
whom believes Hans that Paul phones

It is only possible for the Wh-phrase to appear in the matrix FP if there is a +wh element in the embedded FP. So, if there is a spell-out of the Wh-phrase in the matrix FP in the lower FP the structure will be grammatical. Consider the following examples.

- (69) a. Wen glaubst du wen sie t gesehen hast
whom believe you whom she saw
- b. Welchem man glaubst du wem sie t das buch
gegeben hast
which man believe you whom she the book
given has

Here, the actual Wh-phrase has "moved" to the matrix FP but it has left a copy of itself in the lower FP. So there seems to be a requirement that the embedded FP must be filled before a +f element is allowed to move out.

The similarity between the Armenian and the German data then is the fact that in both languages both the matrix and the embedded FPs are used in forming Wh-interrogatives in embedded clauses, if Wh-phrases are considered to be a subcase of foci, and need licensing, the

lower FP is used to license the foci and the higher FP which has the Wh-particle in it is used to determine the scope of the Wh-phrase. In languages such as English Wh-phrases are inherently +f. In other words, in this language the +f feature is not assigned in the syntax. Rather, it is assigned in the lexicon and therefore has no syntactic consequences. One prediction which can be made now is that languages with partial Wh-movement must have their Wh-phrases licensed in the syntax.

5. A SOLUTION

In this section I shall try to provide an explanation for the data given above. Consider the Focus Criterion given in Brody (1991).

THE FOCUS CRITERION

Recall the Focus Criterion:

- 70) a) Each focus X must be in a spec-head relation with a Focus operator.
- b) Each focus operator must be in a spec-head relation with a focus X.

In the case of Armenian we saw that the Wh-particle does not behave like an operator. The scope marker of Wh-

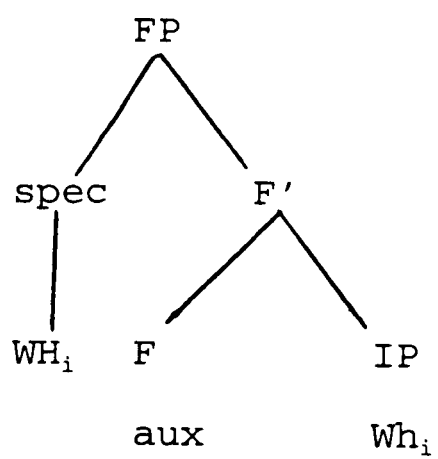
phrases however, is an operator and therefore requires the head of FP to be filled by the auxiliary. On the other hand we saw that Wh-phrases must appear in positions which are governed by the head F of FP, because they need to be licensed as foci by F. This accounts for the fact that in embedded clauses the Wh-phrase can be coindexed with the embedded F and still have matrix scope, the reason being that there are two processes involved in creating the structure. One is having the scope marker adjoined to the spec of the matrix FP, which is marked as +wh by the null Wh-particle, and the second is the licensing of the Wh-phrases which can be done by any F and not just a +wh F. We saw that the licensing of Wh-phrases by any F is allowed because it is the +f feature that needs to be licensed and any head of FP can license it because there is no FP which is not +f.

Having said this, we can now try and account for the scope problem in the following way. Recall that in some of the examples where the Wh-phrase in the lower clause had triggered the auxiliary "movement", it was clear that it had matrix scope. But if the Wh-phrase is linked to the embedded FP, which it should according to the above assumption that the lower FP is +f, then how is it possible for it to have matrix scope? I assume that the case is similar to that illustrated by the German data. In German partial Wh-movement, there is an overt scope marker in the matrix clause. As there is no overt element in the matrix

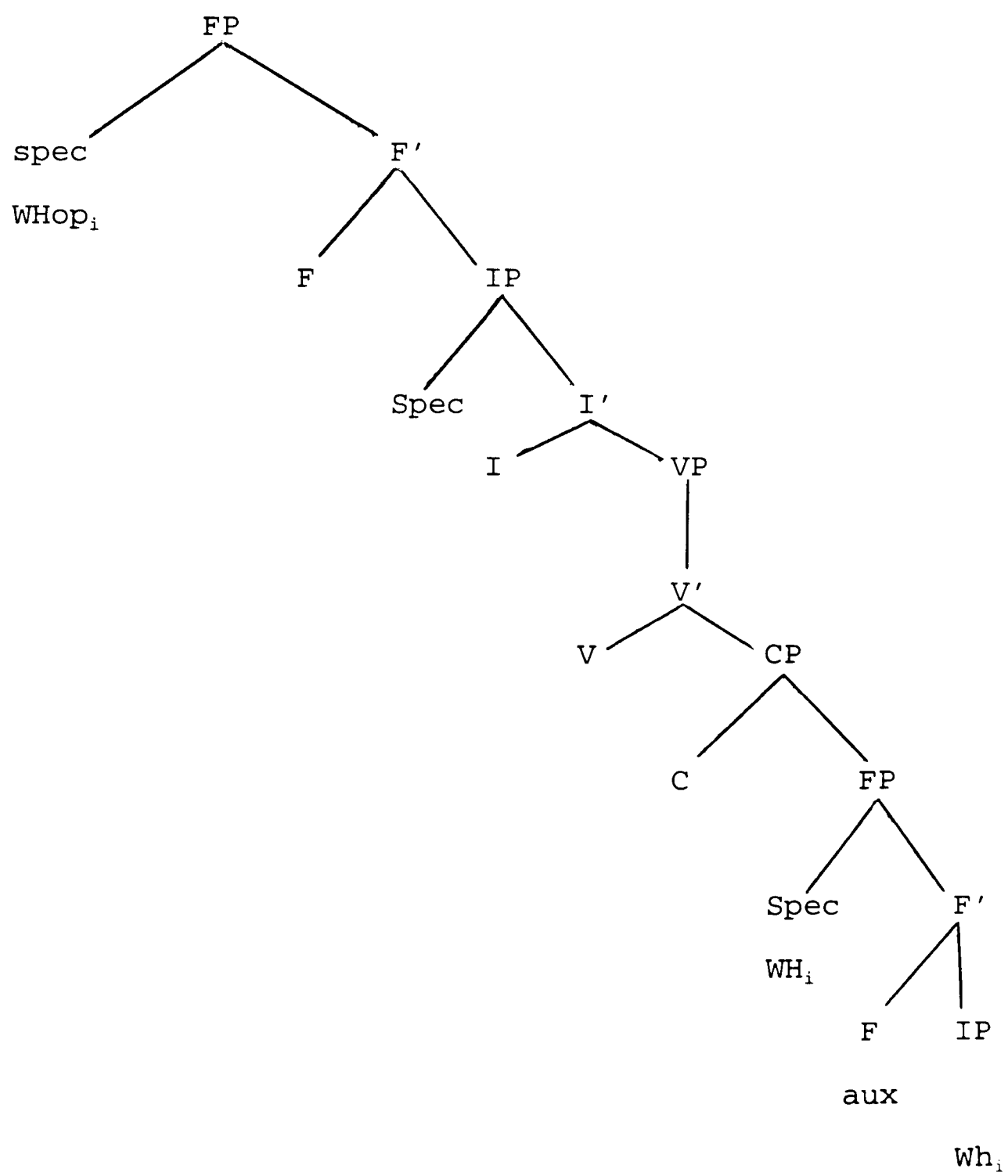
FP to serve as the scope marker for the Wh-phrases in the embedded clause as in the case of German partial Wh-movement, there must be an empty operator in the matrix clause coindexed with the Wh-phrase in the embedded clause to mark its scope.

Thus, every Wh-phrase in the embedded clause which is interpreted as having matrix scope is associated with an empty operator in the matrix FP. Notice that the Wh-Criterion and the Focus Criterion are not violated here because 1- The Wh-Criterion is irrelevant because there is no lexical element in the head of the spec of the +wh FP. 2- The Focus-Criterion is relevant and it is not violated because the operator in the matrix clause is part of a chain (namely the one containing the operator and the Wh-phrase in the embedded clause) one member of which (the Wh-phrase) already satisfies the FC in the embedded clause. Notice however that if there is a wh-operator in the matrix FP coindexed with a Wh-phrase within the matrix clause, then with no movement of the auxiliary in the matrix FP there will be a violation of the Focus Criterion because the Wh-phrase in FP will necessarily need to be in a spec-head relation with a +f X. The relevant trees are given below.

(71) a)



b)



In the first tree the Wh-phrase originates in the matrix clause therefore the auxiliary must be linked to the head of FP because this is the only way the Focus Criterion can be satisfied. In the second tree however, the Wh-phrase originates in the embedded clause and the Wh-chain which is created is (Wh, WH, WHop). One of the members of this chain, namely WH, is in a spec-head relation with the head of an FP (the lower one). This satisfies the Focus Criterion, and because the Criterion has been satisfied by one of the members of the chain there is no need for any other member to satisfy it again. Thus, the Focus Criterion seems to hold for chains rather than just Focussed phrases.

In non-finite clauses, there is a relation between the matrix and the embedded INFLs, therefore because of the anaphoric nature of the embedded Inflection, the two form a chain. In this case, if only one of the two INFLs satisfies the F Criterion the structure will be grammatical. This is the reason why in non-finite clauses the Wh-phrase can either move to the matrix clause or remain in the embedded clause.

5.1. MULTIPLE WH-PHRASES IN INFINITIVES

Finally let us consider multiple Wh-phrases in infinitival clauses. Consider the following example.

(72) ume inch es uzum asel

whom-to what are-you wanting to say

In this case both Wh-phrases are in the higher clause and the structure is still grammatical. We have already seen in cases with single Wh-phrases that it is possible to extract a Wh-phrase out of an infinitival clause. Notice that in this case it is also possible to have the scrambling structure.

(73) ume uzum es inch asel

whom-to wanting are-you what to say

It is also possible to have a structure where both wh-phrases remain in the embedded clause.

(74) uzum es ume inch asel

wanting are-you whom-to what to say.

The reason why the Wh-phrase does not move to its position in the lower clause *overtly* has to do with the fact that it bears the auxiliary which cannot be moved to another clause.

5.2. TOPICALIZATION

Now consider the following example in which the auxiliary in the matrix clause remains with the verb, and

the structure is still grammatical.

- (75) inche sirane asum er ume keta
what-def siran saying was whom-to will give
"What did Siran say she would give to whom"

What these examples show is that in the grammatical examples with the extracted wh-phrase, the wh-phrase is in fact topicalized and adjoined to CP rather than substituted in the spec of CP. This is the reason why the auxiliary has not moved to be adjacent to the Wh-phrase. Given the fact that Wh-phrases are not in FP *overtly* in Armenian, having them topicalized will not create any problems.

- (76) a. * umen er sirane asum pro t vor girken e
talu
Whom was Siran saying pro t which book is
giving
- b. umen er sirane t asum surikin vor girken e
talu
whom was Siran t saying Surik-to which book
is giving

Notice that it is not possible to topicalize both Wh-phrases in the above examples.

- (77) a. * inche ume sirane asum er talu e
 What-def whom-to Siran saying was give is
- b. * ume inche sirane asum er talu e
 Whom-to what-def Siran saying was give is

This is due to the fact that the lower FP is left empty. Evidence for this comes from the fact that the auxiliary is cliticized on the verb which means that it has not been in the head position of FP. Notice that in -wh constructions where the embedded FP does not have to be filled, topicalization of both arguments is possible.

- (78) a. girke surikin sirane asum er talu e
 The book to Surik Siran saying was give is
 "Siran was saying she will give the book to
 Surik"
- b. girke sirane asum er talu e surikin
 the book Siran saying was give is Surik-to
- c. surikin sirane asum er girke talu e
 Surik-to siran saying was the book give is

If it is the embedded FP which has to be filled and this is the reason for the ungrammaticality of the above example, we expect that if a third Wh-phrase is inserted in the embedded clause it should be possible to topicalize two of

them to the matrix clause. This is in fact true as the following example shows.

(79) vor ashakerte vor usutschin sirane asum er
vortegh e tesnelu which student which teacher Siran
saying was where is see

"Siran was saying where which student will meet
which teacher"

It is not possible to topicalize the adjunct Wh-phrase however. The reason is that if the adjunct is not the head of the embedded clause, that is, if it does not carry the auxiliary, it will fail to properly govern its trace because antecedent government will not be available to it. If however, it is linked to the head of spec FP, it will have to remain in the lower clause because it carries the embedded auxiliary which cannot be moved to another clause. Thus, it is never possible to scramble an adjunct Wh-phrase to the matrix clause.

(80) a. * inchu sirane asum e surikin vor girke e
talu

why Siran saying is Surik which book is
give-fut.

"why is Siran saying she will give which
book to Surik"

b. * inchpes sirane asum er surike vor tsoraken
e sarkelu

how Siran saying was Surik which tap is
fix-fut.

"How did Siran say Surik will fix which tap"

5.3. SUBJUNCTIVES

Consider the following examples.

(81) a. sirane uzum e vor ov girke beri
Siran wanting is that who book-the
bring-sub.

"Siran wants who to bring the book"

b. sirane umen e uzum vor t girke beri
sirane who-acc is wanting that book-the
bring-sub.

same

c. * sirane ov e uzum vor t girke beri
Siran who-nom is wanting that book-the
bring-sub.

It is not possible to have the subject of the embedded subjunctive clause extracted to the matrix clause in the nominative form. On the other hand the object of the

embedded clause can be extracted without any difficulty.

(82) sirane vor girken e uzum vor surike t beri
Siran which book is wanting that Surik
bring-sub.

"which book does Siran want Surik to bring"

The fact that subjunctives allow this kind of extraction makes them different from the so called tense-independent clauses. However, as the above examples show, there are restrictions with respect to the extraction of subjects. Consider now the following examples.

(83) a. pro inch kuzes vor Surike t beri
pro what will-want-2s that Surik t
bring-sub.

"What would you like Surik to bring"

b. pro ov kuzes vor girke kard
pro who-nom will-want-2s book-the read
"You would like who to read the book"

In this case, the extraction of the subject is allowed from the embedded clause without the assignment of accusative case. Thus, it seems that if the matrix clause is also a subjunctive then the subject can be extracted from the embedded clause.

It seems that the subjunctive clause allows the extraction of Wh-phrases like infinitivals because of the anaphoric nature of its tense. However, agreement features of the matrix clause must match those of the embedded clause in order for it to be possible to extract the subject.

I suggest that in the case of subjunctives, the anaphoric nature of the tense in the embedded clause allows the extraction of elements. This is the reason why the object of the embedded clause can be extracted to the matrix clause without causing ungrammaticality. However, the subject cannot be extracted because if it does, it will be associated with two distinct AGRs which is not possible. Let us consider the example given above.

(84) * sirane ov e uzum vor t girke beri

Siran who is wanting that t book-the bring-sub.

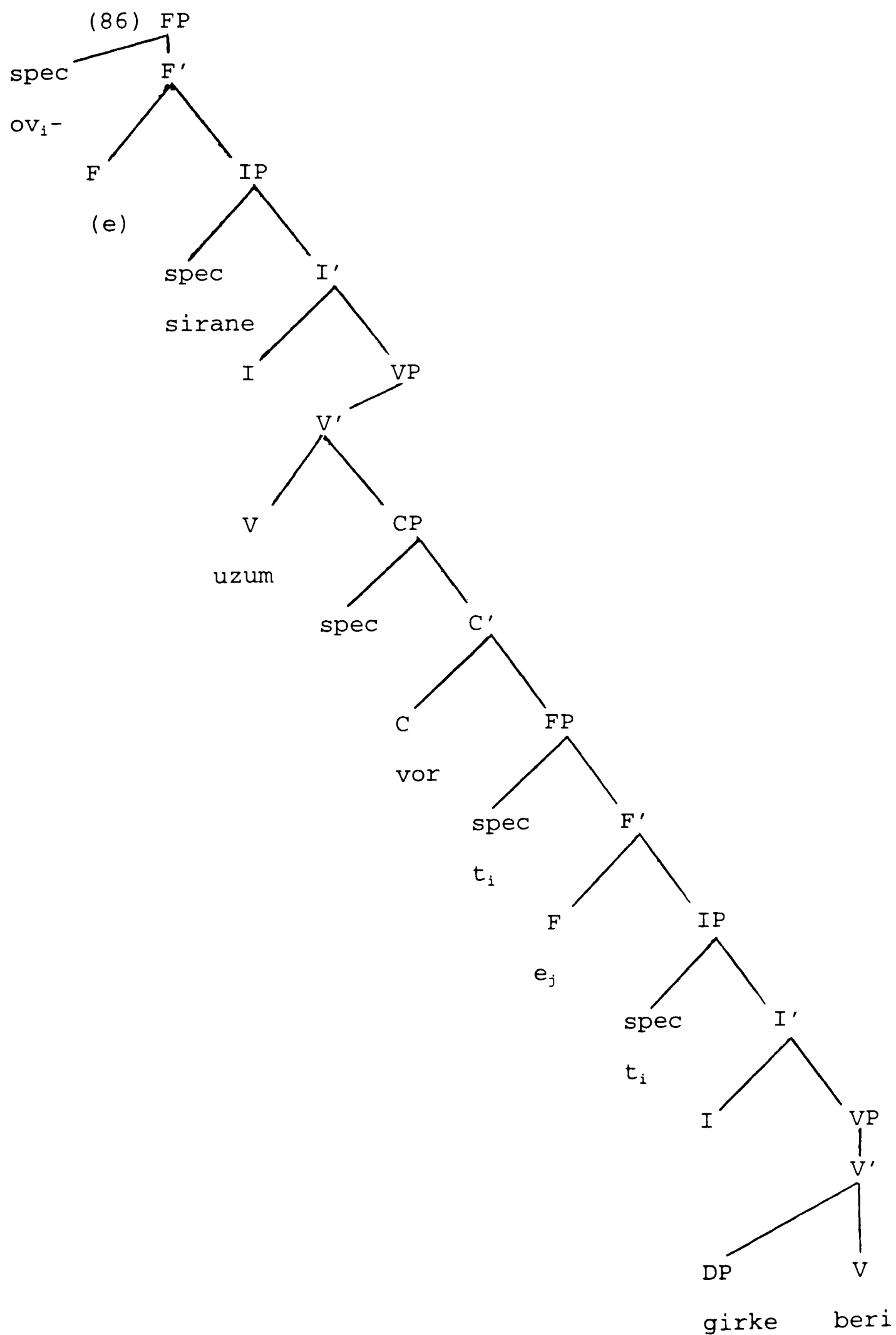
"Siran wants who to bring the book"

Notice that the presence or absence of the complementizer does not play a role in the grammaticality of the sentence. Thus, if the complementizer is omitted the structure will still be ungrammatical which suggests that the ungrammaticality is not due to the ECP.

(85) * sirane ov e uzum t girke beri

Siran who is wanting t book-the bring-sub.

In the above examples the structure will be the following.



Let us assume that because of the fact that the tense of the embedded clause is dependant on the tense of the matrix clause, the embedded INFL becomes "transparent" although not completely anaphoric as in the case of infinitives. This dependency of the tense allows the Wh-phrases in the embedded clause to appear in the matrix *clause*. This causes no problems for the extraction of the object Wh-phrase. This element *is Linked with* the spec of the matrix FP and the matrix auxiliary *is Linked with* the head of FP in the matrix clause to satisfy the Focus Criterion. On the other hand, the subject of the embedded clause is not allowed to appear in the spec of the matrix FP because it cannot be in a Spec-head relation with two INFLs. The subject of the embedded clause already agrees with the embedded infl which has independant agreement features. When the embedded subject appears in the matrix FP it triggers auxiliary movement and enters a *incorporation* relation with it. This causes the embedded subject to *carry* both the matrix and the embedded INFL, therefore it is not possible to have the embedded subject in the matrix clause. Notice that this does not mean that it is not possible for the embedded subject to be associated with a scope marker in the matrix FP. The scope marker in the matrix FP does not require the auxiliary to appear in the head of FP because the chain already satisfies the FC in the embedded clause, therefore the chain of the scope marker and the embedded subject will be associated with the embedded INFL

only. Recall that the embedded subject Wh-phrase must be associated with an operator in the spec of the embedded FP in order to be licensed as a focus. The inflexional features in this case are on the subjunctive verb therefore it is the verb which forms a chain with an element in the head of FP and satisfies the FC.

The above account predicts that if the embedded subject is not in a Spec-head relation with the matrix INFL it can appear in the matrix FP. This is in fact true. Consider the following example which is much more acceptable than example (85) given above.

- (87) ov vor girken es uzum vor kardā
 who which book are-you wanting that read-sub.
 "You want who to read which book"

In this case the auxiliary is attached to the object which means that this is the element it is in a Spec-head relation with, therefore the subject agrees only with the embedded INFL and thus the structure is grammatical.

CHAPTER 4

1. INDEFINITES

In this chapter evidence will be provided to show that indefinites and certain types of adverbs trigger the auxiliary movement like foci. I will then propose that bare indefinites cannot get structural case but do appear in the spec of AGROP where the auxiliary is cliticized onto them.

1.1. THE DATA

Consider the following examples:

- 1) a. sirane mi girk e genel
Siran one book is bought
"Siran has bought a book"
- b. sirane girk e genel
Siran book is bought
"Siran has bought books"
- c. * sirane mi girk genel e
Siran one book bought is
- d. * sirane girk genel e
Siran book bought is

With an indefinite in object position, the auxiliary has to move to follow it. However, this is not the case with indefinites in subject position. Auxiliary movement with indefinite, unfocussed subjects results in ungrammaticality.

- 2) a. mi ashakert ais girke genel e
one student this book bought is
"a student has bought this book"
- b. * mi ashakert e ais girke genel
one student is this book bought

Thus, it seems that the auxiliary movement takes place only when the indefinite is the object of the verb. Otherwise the structure is ungrammatical.

We have seen that in unfocussed constructions the auxiliary gets cliticized onto the verb and it is only in focussed and negative constructions that the auxiliary moves. But as the evidence given below will show, it cannot be the case that indefinites are always focussed, so there must be some other reason for the auxiliary to move onto the indefinites. Notice that this kind of movement only takes place with the direct object of the structure, which suggests that it has to do with accusative case assignment. The indirect object(s) are in most cases supported by postpositions, they are case marked, and they do not make

the auxiliary move.

Example (3a) below is an instance of an indirect object with inherent case, and (3b) is an example of a postposition supporting the NP.

- 3) a. sirane girke mi geradaranits vertsrel e
Siran the book one library-from taken is
"Siran has borrowed the book from a library"
- b. sirane mi ashakerti hamar girk e genel
Siran one student for book is bought
"Siran has bought books for a student"

1.1.1. BARE INDEFINITES

Bare indefinites behave somewhat differently from quantified indefinites. For example it is not possible to have a bare indefinite in subject position or in postpositional phrases.

- 4) a. * ashakert girke kartum e
student the book reading is
- b. * sirane girke ashakerti hamar kartum e
Siran the book student for reading is

"student" in the second example must have a definite

reading for the sentence to be grammatical. Thus the structure will be grammatical if it is understood as : "Siran reads the book for the/her student" in which case the object is no longer an indefinite and there seems to be a null definite determiner in the structure of the DP which binds the noun. Thus, it seems that it is not possible to have a bare indefinite in the PP or in subject position²².

²²There seems to be a problem for this generalization with certain types of bare nouns. That is, it is possible to have the bare form of the indefinites with a nominal suffix "utiun" in the positions given above with a grammatical result. Let us consider the data more carefully. This suffix is usually used to nominalize verbs. as in:

patm-el	patm-utiun
tell-inf.	tell-nomin.
to tell(a story)	story
kenn-el	kenn-utiun
examine-inf	examine-nomin.
to examine	examination

Added to certain nouns, this nominal suffix can give the noun a general, or more precisely a generic force as shown in the following examples.

ashakert	ashakert-utiun
student	student-nomin.
	the type "student"

Such DPs can occur in the positions mentioned above. Consider first the position in the PP.

sirane girke ashakertutian hamar kartum e
 Siran book-the student-nom-gen for reading is
 "Siran is reading the book for all the students"

As the gloss shows the indirect object seems to have a universal quantificational force which is given to it by the nominal suffix. On the other hand, universal quantifiers are syntactically definite. That is, they are accompanied by the definite article, therefore they do not count as the type of bare indefinites under discussion here. In fact the appearance of these nouns in subject position is only possible if there is a definite suffix on

Thus, we have seen that there is a restriction on bare indefinites to appear as subject or in postpositional phrases. However, this restriction does not hold for quantified indefinites which can occur in subject position and in postpositional phrases as well as in direct object position.

- 5) a. mi ashakert girke kartum e
 one student the book reading is

the noun. Bare indefinites can never appear in subject position.

ashakert-utiun-e siranin lesets
 student-nomin.-def Siran listened
 "All the students listened to Siran"

* ashakertutiun siranin lesets
 student-nomin. Siran listened

Notice also that the suffixation of the nominal element on the nouns is pre-syntactic. Evidence for this is provided by the fact that the attachment of this suffix on different nouns gives rise to different interpretations. For example, in the case shown above the noun receives a generic meaning. This is not always the case however. The following list gives an idea of the different range of meanings that can be created by the attachment of this suffix onto different nouns.

usutsich teacher	usutsch-utiun being a teacher
gir letter(alphabet)	ger-utiun written text
ashakert student	ashakertutiun the type student

Thus, it seems that the nouns "ashakert" and "ashakertutiun" in the above examples are two different lexical items, and while "ashakert" is not specified for the features +/- definite, and depends on other elements to determine its definiteness, "ashakertutiun" is always inherently definite.

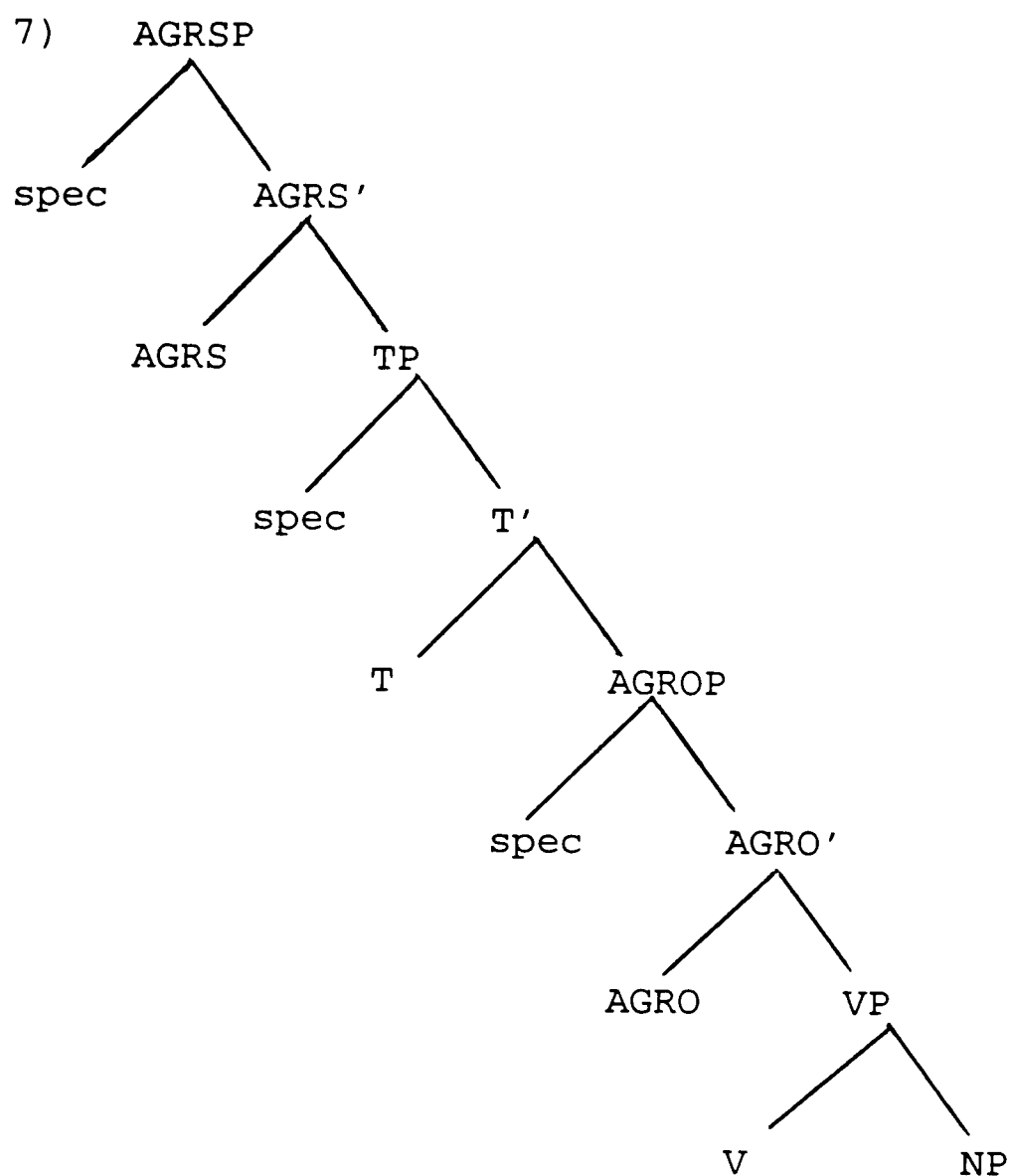
- b. sirane girke mi ashakerti hamar kartum e
 Siran the book one student for reading is

Considering the fact that bare indefinites cannot appear in subject position and in PPs, it seems plausible to assume that case assignment and the case filter are factors in controlling their distribution. Recall also the examples given earlier where indefinites following the verb without triggering auxiliary movement and with no case marking on them.

- 6) a. sirane genel e mi girk
 Siran bought is one book
 "Siran has bought a book"
- b. sirane genel e girk u matit
 Siran bought is book and pencil
 "Siran has bought books and pencils"

1.1.1.1. THE POSITION OF INDEFINITES

We have seen that the direct object position is the only position in which bare indefinites can occur, apart from the position following the verb. Recall that the structure that we have is the following.

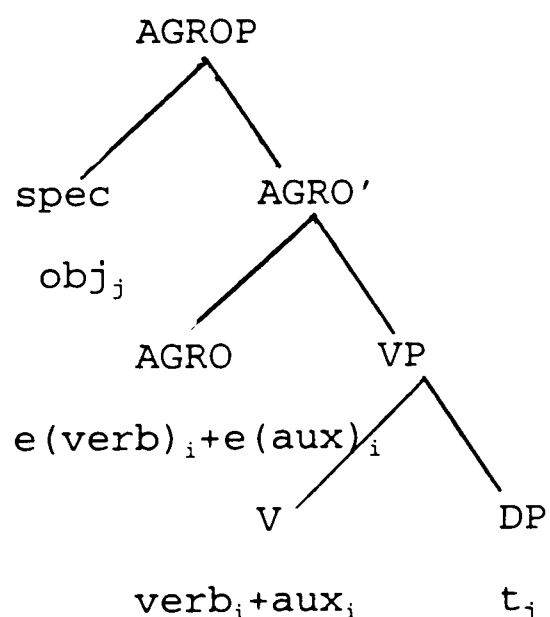


It has been argued in chapter 2 that all elements are base generated in a position following the verb. In other words that the complements of the verb are projected to the right of the verb. The objects are abstractly related to the spec of AGROP in order to have their case checked. This checking is done when the verb is associated with the head of AGROP. In other words case is checked in AGROP in the presence of the verb. Indefinites on the other hand have a choice. They can either be realized in the argument position following the verb, or they can move to the spec of AGROP. I shall assume that indefinites lack the necessary case features to be checked in the spec of AGROP,

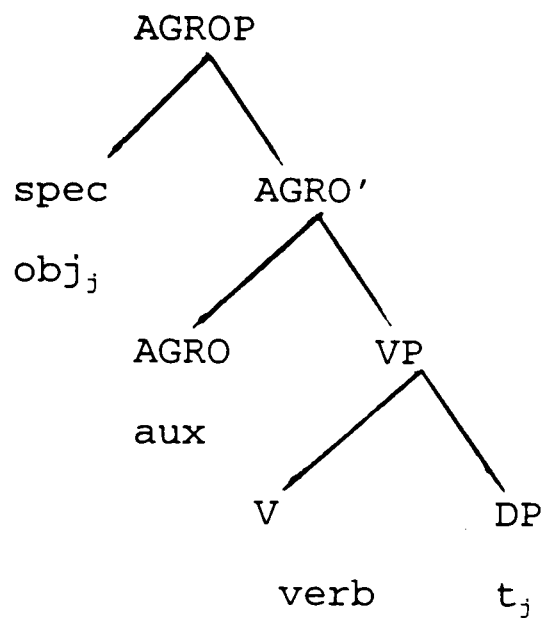
therefore the verb does not get associated with an element in the head of AGROP because this will force case assignment and the structure will be ungrammatical because of the conflict between the case features of the verb and the indefinite which lacks these features. The only element which can appear in the head of AGROP is the auxiliary. If so, in AGROP the auxiliary and the indefinites are in a spec-head relation and therefore the auxiliary is realized on the indefinite rather than the verb. With case marked objects the verb has to form a chain with an element in the head of AGROP in order for the case of the element in the spec of AGROP to be checked according to Chomsky (1992). In this case the auxiliary is necessarily realized on the verb because, as an affix in AGROP, it adjoins to the verb which forms a chain with an element in the head of this projection as detailed in chapter 2. The two structures for definites and indefinites are given bellow.

8)

a) Definites



b) Indefinites



As the two trees show, in cases where there is an indefinite object the auxiliary is left with no support in AGROP. However, an indefinite appears in the spec of AGROP, so the auxiliary attaches to it. In cases with definite objects, both the verb and the auxiliary chains have elements in the head of AGROP, therefore the auxiliary is realized on the verb.

1.1.1.2. FOCI AND INDEFINITES

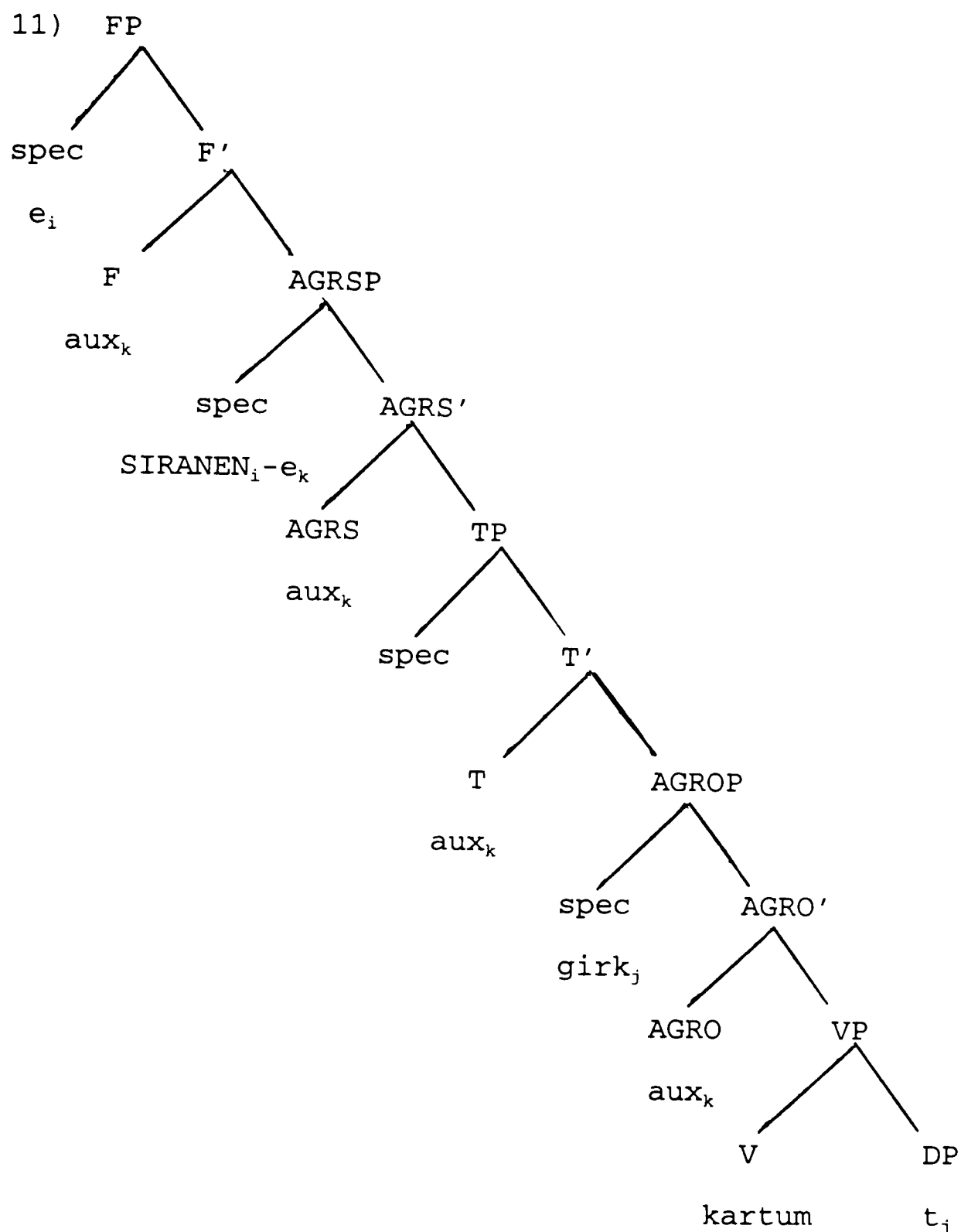
Let us now consider structures with indefinites as well as focussed elements. With foci in the structure, the features of the auxiliary are always realized on the focus rather than the indefinite.

- 9) SIRANEN e girk kartum
 SIRAN is book reading
 "it is Siran who reads books"

This indicates that the indefinite in this structure (and in fact in all the above cases) is a non-focussed element, because in structures with more than one focus the auxiliary must follow the last focussed element. This is not the case with indefinites.

- 10) a. * SIRANE girk e kartum
 SIRAN book is reading
- b. SIRANE GIRK e kartum
 SIRAN BOOK is reading
- c. * SIRANEN e GIRK kartum
 SIRAN is BOOK reading

Thus it is not possible to say that indefinites are always focussed and in spec of FP at LF. This provides further evidence that auxiliary movement is triggered not by a +f feature of the indefinites but by some other process. Notice further that the analysis presented above will explain why the auxiliary attaches to the focus rather than the indefinite in this case. Consider the structure of the grammatical example given in (10b).



In this structure the auxiliary forms a chain with elements in all the functional heads up to the F head of FP. I have indicated this chain by using "aux" throughout. In fact they are all empty elements the actual auxiliary is realized on the focussed subject. Also to facilitate reading I have used different indices for the auxiliary and the focus whereas in reality they are coindexed in FP.

The reason why the auxiliary attaches to the focussed phrase rather than the indefinite has to do with the fact that the focussed element is the highest element in the clause which is in a spec-head relation with the auxiliary and therefore the highest element onto which the auxiliary can attach. The auxiliary chain must include the head of FP because of the Focus Criterion and the licensing requirement for foci. Because the focussed phrase and the auxiliary are in a spec-head relation and also because of the shared +f feature, the auxiliary attaches onto the focussed phrase. We have already seen in simpler cases that when the auxiliary chain shares the +f feature with another element in the Spec of FP it has to be realized on this element.

1.1.1.3 ADVERBS

1.1.1.3.1. BASIC FACTS

Certain types of adverbs, also trigger auxiliary movement. Consider the following examples with adverbs:

- 12) a. aisor sirane surikin tesel e
 today Siran Surik seen is
 "Siran has seen Surik today"
- b. barebakhtabar sirane ais girke pahel e
 fortunately Siran this book kept is
 "fortunately Siran has kept this book"

- c. aragoren sirane dure batsum e
 quickly Siran the door opening is
 "Siran is opening the door quickly"

- d. sirane ais girke arag e kartum
 Siran this book quick is reading
 "Siran reads this book quickly"

- e. sirane ais girke shat e sirum
 Siran this book very is liking
 "Siran likes this book very much"

In the last two examples the adverb attracts the auxiliary, in the other examples however, the auxiliary stays with the verb. Notice also that the adverbs in the last two examples cannot be in sentence initial position.

- 13) a. * arag e sirane ais girke kartum
 quick is Siran this book reading

- b. * shat e sirane ais girke sirum
 very is Siran this book liking

This fact suggests that this class of adverbs are generated in a position lower than the others. This class of adverbs which attract the auxiliary include adverbs which have the property of modifying the verb. In other words these are

adverbs adjoined to VP and thus they modify the elements which are in VP. With the structure given above these adverbs will only modify the verb, because the subject and the object are licensed in higher positions within their chains (The subject in spec AGRSP, and the object in spec AGROP). The interpretation of these adverbs indicates that they actually modify only the verb and they also give an emphatic reading to the verb. They emphasize the verb in a positive or a negative way depending on the nature of the adverb.

Consider now examples (c) and (d) given above. In example (c) the adverb "aragoren" is given with the adverbial suffix "oren", in example (d) however, the same adverb lacks the adverbial suffix while still retaining its adverbial status. The first group of adverbs with the adverbial suffix are adverbs which appear in a position higher than the VP. These are sentence adverbs. The second group of adverbs which attract the auxiliary are those which appear adjoined to VP and modify only the verb. Furthermore I shall argue that the VP adverbs always appear in a +f environment. That is they always appear in clauses where there is a focus. If there is no focussed element in the clause they themselves will be focussed. otherwise they behave as polarity items which are licensed by the +f environment. Thus, the following example in which there is no focussed element, is ungrammatical.

- 14) * sirane ais girke shat sirum e
Siran this book very liking is

The following two examples are both grammatical however.

- 15) a. sirane ais girke SHAT e sirum
Siran this book VERY is liking
"Siran likes books very much"
- b. SIRANEN e ais girke shat sirum
SIRAN is this book very liking
"It is Siran who likes this book very much"

The fact that elements necessarily need to be stressed in such a construction is shown by the behaviour of the verb. This can bear the auxiliary without having to be focussed in declaratives, but needs to be focussed if it bears the auxiliary in a structure with a VP adverb.

- 16) sirane ais girke arag KARTUM e
Siran this book fast READING is
"Siran is READING this book fast"

This sentence could be used in a context to mean that Siran is not just looking at the pictures, she is actually READING the book.

Furthermore in cases where the adverb is not focussed one of the other elements in the structure must necessarily be focussed.

- 17) a. * sirane surikin shat sirum e
Siran Surik very liking is
"Siran likes Surik very much"
- b. SIRANEN e surikin shat sirum
SIRAN is Surik very liking
"It is Siran who likes surik very much"
- c. sirane SURIKIN e shat sirum
Siran SURIK is very liking
"It is Surik that Siran likes very much"

Thus, it seems that the VP adverbs which modify and emphasize the verb behave as foci when there is no other focussed element in the structure, and it is because of the +f feature and the spec-head relation in FP with the auxiliary that the adverb bears the auxiliary on it.

1.1.1.3.2. INDEFINITES AND ADVERBS

We can now turn to the interaction between VP adverbs and indefinites. Let us first consider the status of indefinites.

It was mentioned earlier that case is not marked overtly on bare indefinites and only optionally on quantified indefinites. Let us assume, following Abney(1987) that case is assigned only to DPs and not NPs. If this is true, then bare indefinites will be just those elements which receive no case because they are NPs which can never be a part of a DP. Consider the following examples:

- 18) a. yerekhan tcharutjun kani
 child-def bad-nom will-do
 "children are naughty"
- b. yerekhain tsekhakhot tchen ta
 Child-gen-def cigarette not-will give
 "You don't give cigarettes to a child"

As the examples show generics do occur in subject position and in PPs. This contrast between generics and bare indefinites can be accounted for in the following way. Bare indefinites do not form a DP therefore they are not able to get structural case. This is the reason why they cannot appear in subject and indirect object position. They are able to occur in direct object position because they manage to escape the case assignment requirement. I shall consider this in detail below. Quantified indefinites on the other hand do form a DP with the quantifier occupying the D position, therefore they manage to get case and thus appear

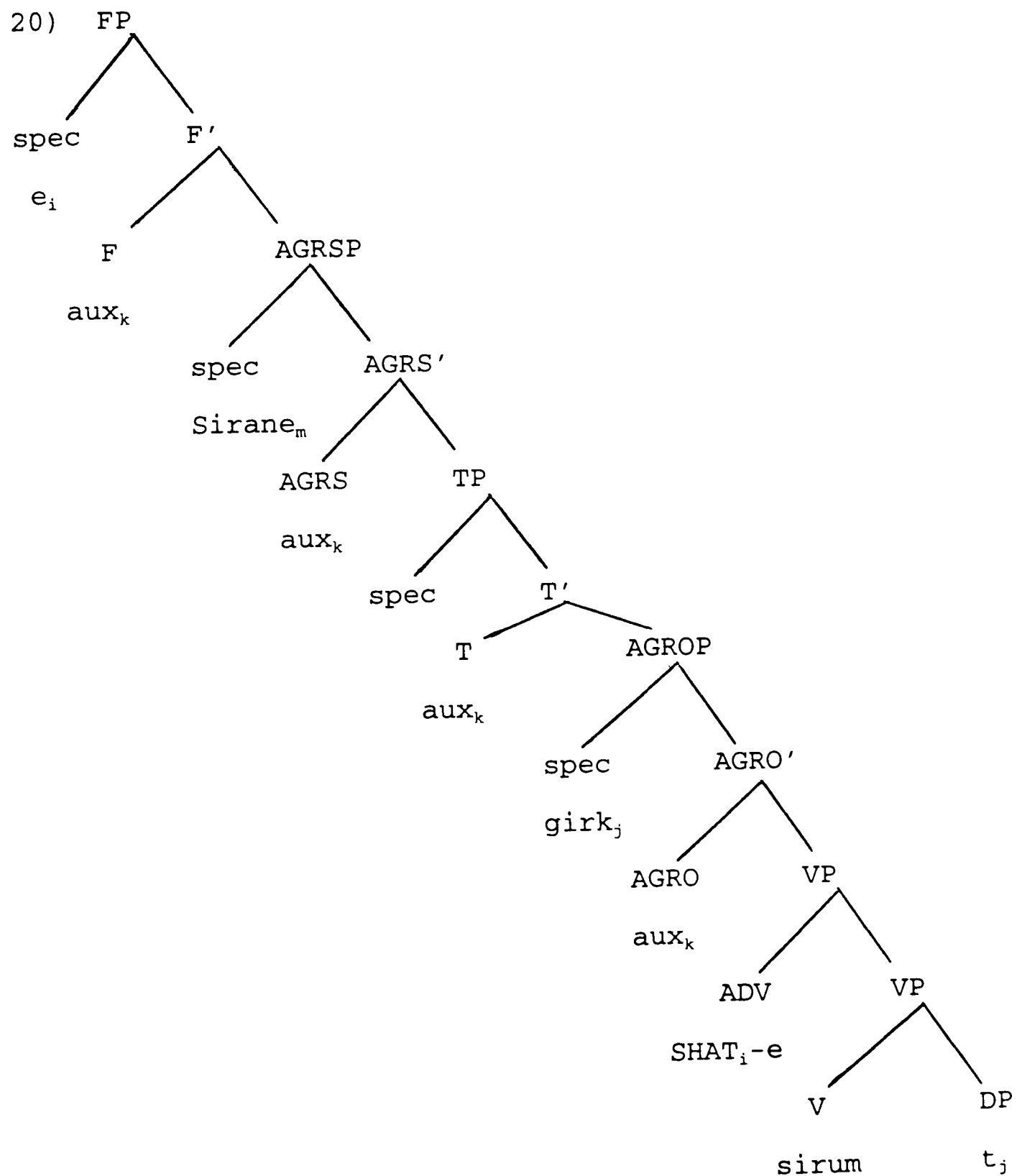
in subject and indirect object positions. The reason why generics can appear in those same positions then will become clear. Generics always seem to have an empty quantifier which gives them the status of DPs (see Longobardi (1994)). Considering the fact that generics are DPs with an empty quantifier in D, they are able to get case like quantified indefinites, and occur in positions where bare indefinites cannot occur. It is now clear why in PPs and subjects only the generic meaning is available. The generic determiner acts like an ordinary determiner which is assigned case.

Let us now consider some examples with both an indefinite and a VP adverb.

- 19) sirane girk SHAT e sirum
Siran book VERY is liking
"Siran likes books very much"

We have already seen that the adverb only appears in +f environments and in general, if there is no other focus in the structure, the adverb is focussed and therefore it gets the auxiliary cliticized onto it. In the above example the adverb is focussed and there is no other focus in the structure, therefore it is the adverb and not the indefinite that bears the auxiliary. The analysis which was presented above for indefinites and foci, predicts that whenever there is a VP adverb in the clause and no other

focus in the same clause, then the auxiliary will always be attached to the adverb because this element shares the +f feature with the auxiliary and needs to be licensed by it in FP. As the example shows, this is a correct prediction and the structure is as the following.



Notice that the prediction that the auxiliary is attached to the focussed adverb unless some other element in the clause is focussed is correct. With a VP adverb in the clause some other element bearing the auxiliary must necessarily be focussed if the adverb remains unstressed.

1.1.2. QUANTIFIED INDEFINITES

As mentioned earlier, quantified indefinites may behave in a similar way to bare indefinites in that they can also trigger the same kind of auxiliary movement that bare indefinites do. However, quantified indefinites also have the option of behaving like ordinary case marked DPs in which case the indefinite is case marked and the auxiliary remains with the verb as with definites. Let us consider the distribution of quantified indefinites.

- 21) a. sirane mi girk e genel
 Siran one book is bought
 "Siran has bought a book"
- b. * sirane mi girk genel e
 Siran one book bought is

These examples parallel the ones with bare indefinites. However, the differences between bare and quantified indefinites becomes clear in the following examples:

22) a. sirane mi ashakerti tanum e tun
Siran one student taking is home
"Siran is taking a student home"

b. * sirane mi ashakert tanum e tun
Siran one student taking is home

Note that in the first case the indefinite has overt case. This seems to suggest that quantified indefinites unlike bare indefinites are in fact able to receive overt case from the verb, ie. they can behave like definite arguments or DPs. So while quantified indefinites seem to be able to receive case from the verb, in cases where they do not get case they have to be followed by the auxiliary. Consider the following examples which show the contrast between the case marked and non-case marked quantified indefinites.

23) a. sirane mi katvi gerkel e
Siran one cat-acc holding is
"Siran is holding a cat"

b. * sirane mi katvi e gerkel
Siran one cat-acc is

c. sirane mi katu e gerkel
Siran one cat is holding

- d. * sirane mi katu gerkel e
 Siran one cat holding is

Having said that quantified indefinites may get case it can be predicted that these quantified indefinites can appear in subject position, because this is a position to which only structural case is assigned. In other words any element in this structural position will necessarily get nominative case. This is in fact correct as shown in the following example.

- 24) mi ashakert ais girke genel e
 one student this book bought is

One mechanism which would explain the above facts could be construed in the following way.

The quantifier in quantified indefinite structures forms a Q(uantifier)P projection. QP does not get case, therefore it either appears post verbally, or it triggers auxiliary movement when in preverbal position. It is however, also possible to have a DP higher up. Thus, QP can also be considered as the complement of D in a DP. In this case the quantifier will move to D and there will be a proper DP which can be assigned case. This is when we see case assignment with indefinites.²³

²³ This idea was suggested to me by M. Brody (p.c.)

1.2. THE VERB AND CASE

1.6.1. THE CASE CHECKING POSITION

The case that the verb assigns to its direct object is a structural accusative case. Quantified indefinites and generics which have a null generic determiner behave in a different fashion with respect to case. Overtly quantified indefinites can get both structural and inherent case whereas generics only get inherent case. Let us first consider the structural case marked on definite objects.

- 25) a. siran-e ais girk-e kartum e
 Siran-the this book-the reading is
 "Siran is reading this book"
- b. sirane surik-i-n kanchum e
 Siran Surik-gen-the calling is
 "Siran is calling Surik"

Notice that there are different suffixes attached to the two objects in the above examples. It is not possible to change the suffixes in these examples.

- 26) a. * siran-e ais girk-in kartum e
 Siran-the this book-gen-the reading is
- b. * siran-e surik-e kanchum e
 Siran-the Surik-the calling is

The use of different suffixes seems to be dictated by the lexical nature of the object DP. That is, animate definite objects receive the accusative case plus the definite suffix, and definite inanimate objects only get the definite suffix. So case is not marked overtly on inanimates, and therefore these are indistinguishable in form from definite subjects which also do not have overt case marked on them. These too, only have the definite article suffix on them.

Let us now consider the nature of the case which is marked on the animate definite direct object. As shown in the glosses, the suffixes that are realized on this DP are the accusative case marker. Notice that "i", the accusative case marker, is identical to the genitive case marker as the following examples with possessives show.

- 27) a. yes siran-i girke kortserel em
 I Siran-gen book-the lost am
 "I have lost Siran's book"
- b. siran-i maire neran sirum e
 Siran-gen mother her liking is
 "Siran's mother likes her"

"n", which is added to the definite object is a morphological alternant of the schwa which is the definite

suffix. The reason for having the two forms of the definite suffix is phonological.

- 28) a. ara-n siranin sirum e
Ara-the Siran liking is
"Ara likes Siran"
- b. * ara-e siranin sirum e
Ara-the Siran liking is
- c. * surik-n siranin sirum e
Surik-the siran liking is
- d. surik-e siranin sirum e
Surik-the siran liking is

It should be mentioned further that the dative also has the same form in Armenian. Thus indirect objects may get assigned dative case which is identical to the accusative case.

- 29) sirane ir girke tevel e surik-in
Siran her book-the given is Surik-Dat
"Siran has given her book to Surik"

Consider now the following two examples with a quantified indefinite as the direct object:

- 30) a. sirane mi katu e gerkel
 Siran one cat is holding
 "Siran is holding a cat"
- b. sirane mi katvi gerkel e
 Siran one cat-acc holding is

The important fact here is that in the second case, that is, in the case where the auxiliary does not move, the object bears what seems to be the accusative case marker.

Generics show, that accusative is a structural case distinct from the inherent genitive case despite the overt similarity, and generics can receive only the inherent genitive case. Consider the following examples.

- 31) * sirane katvi gerkel e
 Siran cat-i hold is
 "Siran is holding a cat"

The indefinite "cat" is an animate direct object, yet it cannot get the accusative case. Notice that generics can in general get inherent case. Consider the following example.

- 32) sirane votchkhar-i mis tchi utum
 Siran sheep-pos meat not eating
 "Siran doesn't eat sheeps meat"

In this example, the indefinite "sheep" gets inherent genitive case inside the DP. Thus, it seems that while generics can get inherent case, it is not possible for them to get structural case.

The following example is one where the indefinite is the object but the case it is assigned is not structural accusative but inherent ablative and the sentence is completely grammatical.

- 33) sirane katv-its vakhenum e
Siran cat-from scared is
"Siran is scared of cats"

Notice that here the nominal is necessarily assigned a generic interpretation which means that it is a DP rather than just being a bare NP. Thus, as the gloss in the above example shows the sentence does not mean that Siran is scared of some cat. Rather, it means that she is scared of cats in general. Bare indefinites, which can only occur in object position and must be supported by the auxiliary are NPs and get no case at all.

Let us now turn to the quantified indefinites examples given in (30) once again.

34) a. sirane mi katvi gerkel e
Siran one cat holding is

b. sirane mi katu e gerkel
Siran one cat is holding

It is now clear that in the first example above, the indefinite is assigned structural accusative case, since it is the position in which the indefinite appears that determines whether it is assigned this case or not. This means that the case is structural rather than inherent.

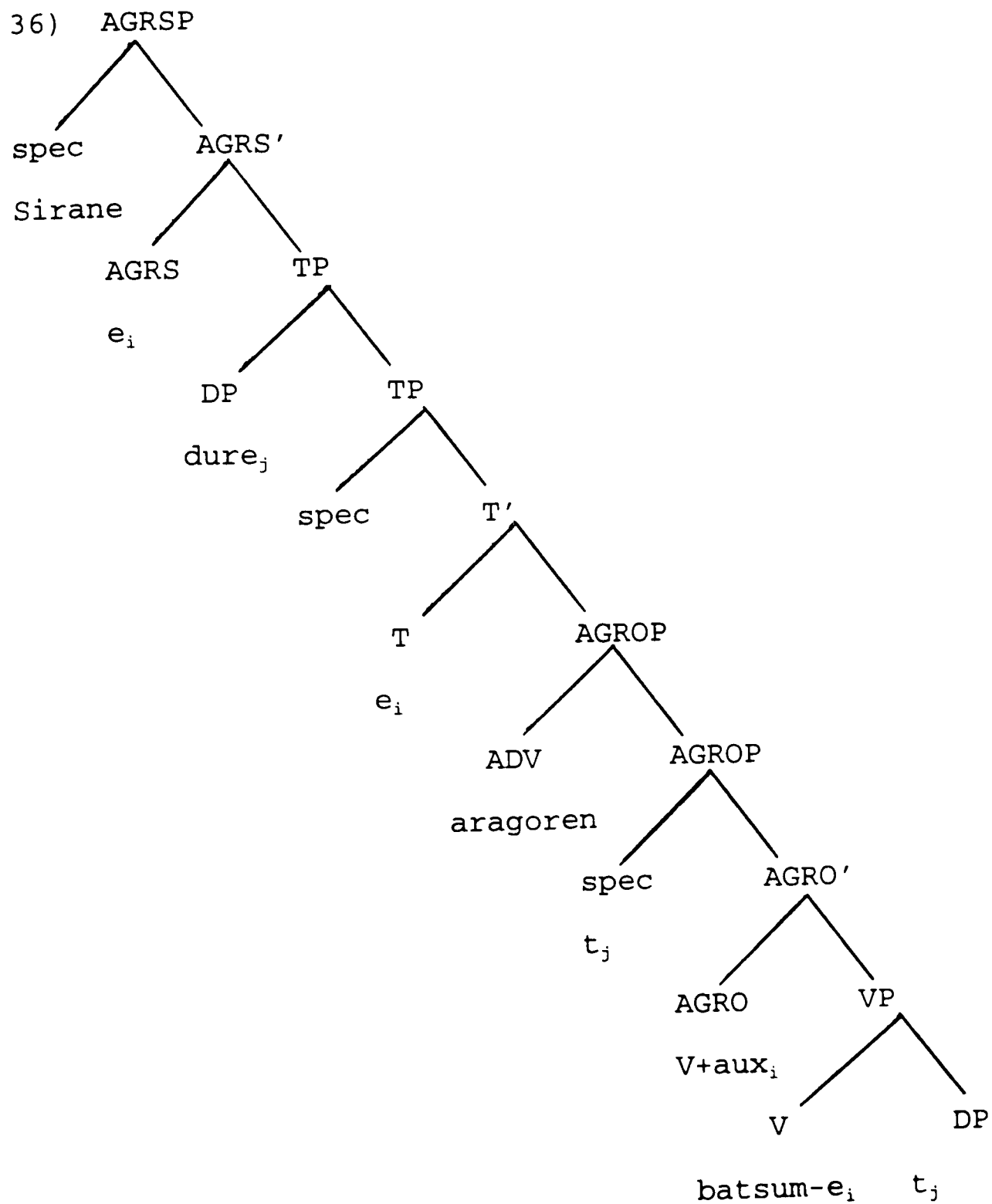
1.3. THE POSITION OF INDEFINITES

Recall that it is not possible to have a sentential adverb in between the indefinite and the verb, though in general, it is possible to have adverbs in between the object and the verb if the object is a case marked definite DP.

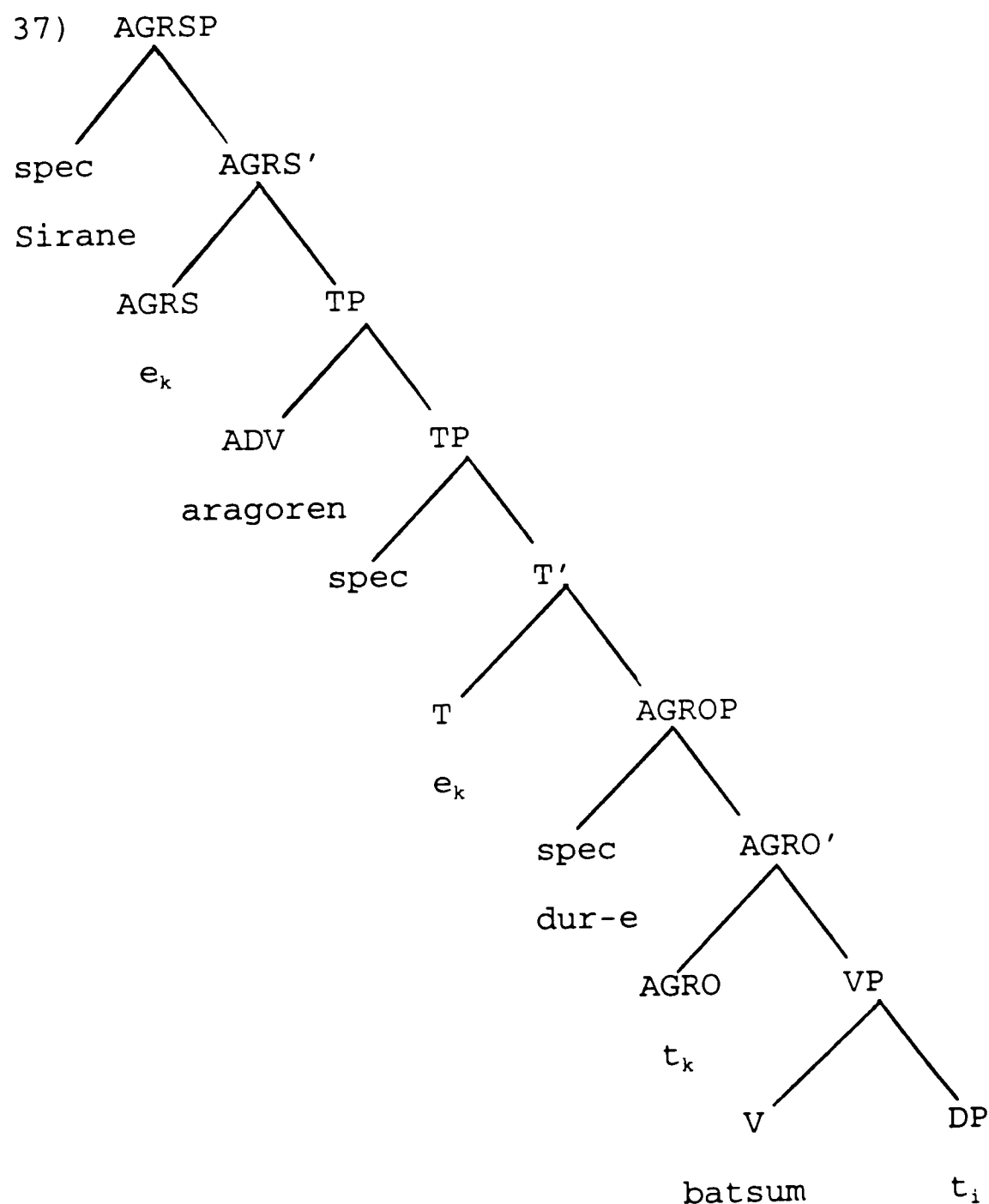
35) a. sirane aragoren dure batsum e
Siran quickly the door opening is
"Siran is quickly opening the door"

b. sirane dure aragoren batsum e
Siran the door quickly opening is

We have seen that both definites and indefinites are licensed in AGROP. So the difference in their behaviour has to do with the fact that definite DPs can be scrambled to a higher position whereas indefinites cannot. Thus, the structure for definite and indefinite constructions is the following. First the definites.



Thus, the adverb is adjoined to the AGROP and the object is scrambled to a position higher than AGROP. Notice that these adverbs can also appear in sentence initial position which means that they can also be adjoined to AGRSP. On the other hand, it is also possible for the object to remain in the spec of AGROP in which case we get the order in the (a) example above. Let us now consider the structure of indefinite constructions.



In this case only one option is available. The indefinite cannot appear in a higher position in the tree. Mahajan (1990) argues that the reason why indefinites cannot scramble has to do with the fact that they need to be assigned partitive case. He assumes that partitive case is a structural case assigned by the verb; therefore the indefinite, in his analysis, has to remain inside the VP. The same argument can be presented here with one difference. We have to assume that partitive case is assigned by AGRO rather than the verb. It can then be argued that this case cannot be transmitted by the trace in a chain, therefore indefinites which scramble will lose their case and thus create ungrammaticality.

We need to consider what happens when the indefinite does not move to the spec of AGROP. Recall that it is possible for indefinites to follow the verb and not trigger the auxiliary movement.

- 38) sirane genel e mi girk
Siran bought is one book
"Siran has bought a book"

This is not a problem. In all cases where the indefinite remains in its base position the auxiliary must be with the verb. consider the following examples.

- 39) a. SIRANEN e mi girk genel
SIRAN is one book bought
"It is siran who has bought a book"
- b. * SIRANEN e genel mi girk
SIRAN is bought one book

The second example in which the indefinite has remained following the verb is ungrammatical. The reason for this asymmetry is the following. Those indefinites which do not get case from the verb need to get partitive case. One position where this case is assigned is the spec of AGROP. In cases where the indefinite remains in its base position however, it has to be assigned partitive case in a different way. The fact that the auxiliary is on the verb suggests that the verb forms a chain which has an element in the head of AGROP because of which the auxiliary is affixed to the verb. The fact that the verb is linked with the element in the head of AGROP and also head governs the indefinite object makes it possible for the verb to assign partitive case to the indefinite through head government. Thus, it becomes clear why the auxiliary has to be attached to the verb when the indefinite remains in situ. If the auxiliary is not attached to the verb it means that the verb is not linked with the head of AGROP and therefore it fails to assign partitive case to the indefinite. The examples given in (39) show that this is a correct prediction. Whenever the indefinite remains in its base

position the auxiliary has to be attached to the verb to assign partitive case to the indefinite. Thus the fact that the indefinite is not in the spec of AGROP is not a problem as long as the verb is linked to the head of this projection and can therefore assign partitive case to the indefinite.

2. NEGATION

2.1. PREVIOUS ANALYSES

In this section, I shall be dealing with sentential negation in Armenian. In the first part I shall summarize some of the proposals made in the literature for analyzing sentential negation. I shall give some historical background to the analysis of negation and "do" support in English. I shall present the analyses proposed by Pollock (1989), Chomsky(1989) and Laka (1990). In the second section I shall give the data from Armenian and suggest an analysis for Armenian negative structures.

2.1.1. POLLOCK'S ANALYSIS

Pollock (1989) proposes that theta theory and the theory of quantification are the two subtheories of UG which are responsible for do support in English negative constructions. He argues that while theta theory forces the verb not to move, the theory of quantification makes it obligatory for the verb to move to a higher position. Thus, in order to solve this conflict, in English, do is inserted

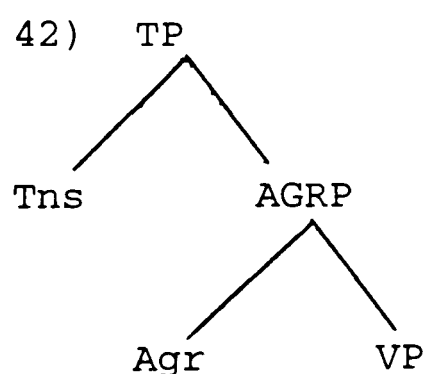
into the structure, so that both theta theory and the theory of quantification will be satisfied at the same time. The argument goes as follows.

Consider the following examples:

- 40) a. * Mary kisses often John
 b. Marie embrasse souvent Jean

- 41) Mary often kisses John

Pollock assumes a split structure for Infl., ie. he assumes that Infl consists of two separate maximal projections: TP, the head of which is Tense, and AGRP which is headed by Agreement. He argues that movement of the verb to Infl in this structure consists of two movement steps. First the verb moves to AGRP and then the complex V+AGR moves to TP. The order of the maximal projections is given in the following simplified structure:



V

He then proposes that in English the verb cannot move to AGR, because Agreement in English is not strong enough to be able to pass the theta grid of the verb to the trace in VP, therefore if the verb moves, the arguments will fail to be theta marked. On the other hand in French Agr is strong enough to pass the theta grid to the trace of the verb which has moved to Agr. He then assumes that Tense is an operator which must bind a variable, and defines a variable for (+finite) tense as follows:

- 43) @ is a variable for +/- past iff
@ = e bound by +/- past

This makes the verb raise obligatorily in order to create a trace for Tense to govern. In English, it is not possible to move the verb into AGR to create the trace for Tense to bind, because there would be a violation of the theta criterion; the arguments of the verb will not get a theta role because the theta grid will not be passed to the trace of the verb by AGR which is weak in English. In other words, in English, the verb does not overtly raise to AGRP or TP, but the inflexional features lower to the verb (affix hopping), whereas in French because of the fact that AGR is transparent and can transmit the theta grid of the verb to the trace under V, overt movement of the verb does not create ungrammaticality. Now the reason for having do support in English becomes clear. Consider the following

examples:

- 44) a. * Mary likes not John
b. * Mary not likes John
c. Mary doesn't like John

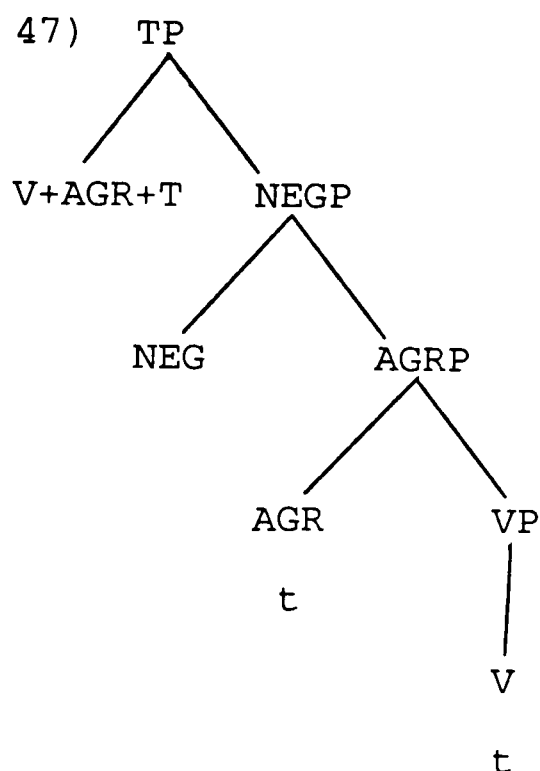
- 45) a. Marie n'aime pas Jean
b. * Marie ne pas aime Jean

In order to account for the contrast in examples such as these, Pollock also assumes that negation has its own maximal projection in the structure. The insertion of "do" is a language particular process to ensure that there is a variable to be bound by Tense. This variable is created by movement of do which raises to tense leaving a trace to be bound by Tense. In cases where there is an overt auxiliary in the structure, there is no need for the insertion of "do", because the auxiliary can raise to Tense and create the necessary variable to be bound by Tense. In non-negative constructions Pollock argues that there is a non-lexical auxiliary which also raises to Tense and creates a trace to be bound by Tense. The following example shows that when there is an auxiliary present in the structure, there is no need to insert a "dummy" do.

- 46) Mary wouldn't do that

2.1.2. CHOMSKY'S ANALYSIS

Chomsky (1989) also assumes a split Infl. and a NegP. However, his analysis differs from that given by Pollock in that he proposes that the factor triggering "do" support in English has to do with the ECP and the principle of Economy of Derivation. He proposes the following structure:



Chomsky assumes that Tense is a bound morpheme which needs to be supported by a lexical element (Lasnik's Filter). He also assumes that AGR deletes at LF. He argues that tense and agreement lower to the verb at S-structure, and raise again at LF. This meets no problems in declarative sentences; the movement of the inflected verb does satisfy the HMC²⁴. In cases where there is a NEGP between TP and AGRP however, the movement of the inflected verb past the

²⁴The Head Movement Constraint (HMC) requires that heads move step-by-step and pass through all the intermediate head positions on the way to their landing sight.

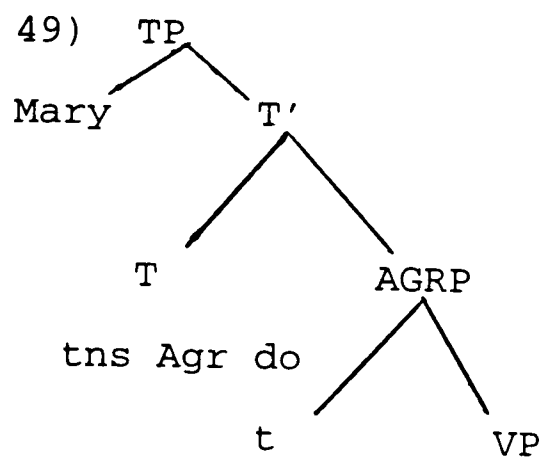
NEG head of NEGP violates the ECP. This is the reason why English resorts to do support. Do is inserted in the modal position which then moves to TP. The bound morpheme (tense) attaches to a lexical element (do), and therefore it does not need to lower to the verb, and raise further at LF.

2.1.3. LAKA'S ANALYSIS

Laka notes two problems with Pollock's analysis. First she notes that if lowering of Tense and agreement takes place at S-structure then the ECP will be violated because the traces of Tense and agreement will not be governed. Secondly, she notes that there is no way of predicting which auxiliary will appear in the right environment; the dummy do (in negative constructions) or the non-lexical auxiliary (in non-negative constructions). She notes that in constructions such as the following, the ECP is not violated, and quantification theory is also satisfied but such a structure is in fact impossible to have. This is a case where there is an overt do in a non-negative (declarative) sentence.

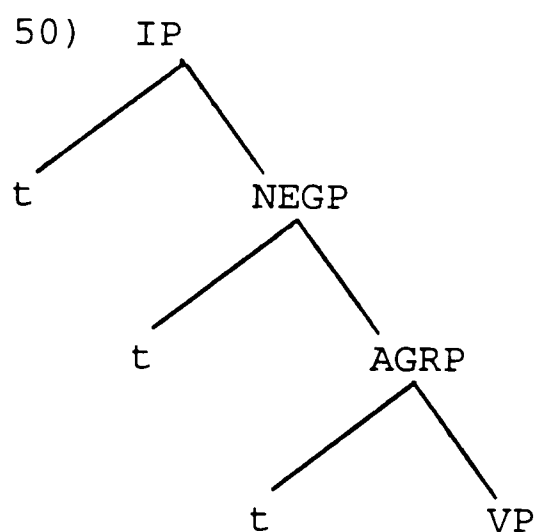
48) * Mary did leave

The structure of this sentence is given below and neither quantification theory, nor the ECP are violated.



leave

Laka also notes that Chomsky's analysis does not explain why a derivation such as the one given below is not possible.



V+AGR+NEG+T

She argues that it is not explained why it is not possible to have a derivation where the negative morpheme lowers to the verb together with the tense and agreement morphemes. Such a derivation seems to be possible in the above analysis, because at LF the verb will raise to NEGP and IP and all the traces will be governed satisfying the ECP. So she argues that there are two questions which remain

unanswered in this analysis. Namely:

(1) Why are negation and the Q morpheme incapable of lowering to V at S_structure and be rescued by LF in English?

(2) Why is it that movement of the verb at LF must skip negation?

After posing these problems with the two analyses (Pollock and Chomsky) Laka (1990) proposes that negation is base generated in AffP a maximal projection higher than IP to which focussed elements move. The verb or the auxiliary, if there is one in the structure, moves to the head of the AffP in order to satisfy the TCC which I repeat here for ease of reference.

51) THE TENSE C-COMMAND CONDITION

Tense must C-command at S-structure all propositional operators of the clause.

She suggests that in languages such as Basque AffP is higher than TP, and in languages such as English AffP is lower than TP. this yields the following two structures:

English

Basque

TP

NEGP

NEGP

TP

VP

VP

Laka argues that do support is a consequence of the Tense C-command Condition (TCC)

Her argument for do support as being dictated by the TCC goes as follows. Lowering of negation to the verb is not possible because the scope of negation must not be altered at S-structure. On the other hand tense moves down onto the verb. This violates the TCC because negation is a functional head operating on the event variable, and if tense lowers to the verb leaving negation behind, tense will not C-command it and the structure will be ungrammatical.

In order to avoid this problem, Laka argues that "do" is inserted in the head position of TP which will then C-command negation and all other operators in the structure.

The important aspect of Laka's analysis that concerns us here is the fact that she takes negation to be generated in the same projection as foci, namely ZP. She argues that

languages do not have a separate projection for negation. Here are some of the examples and the structure that she gives for them.

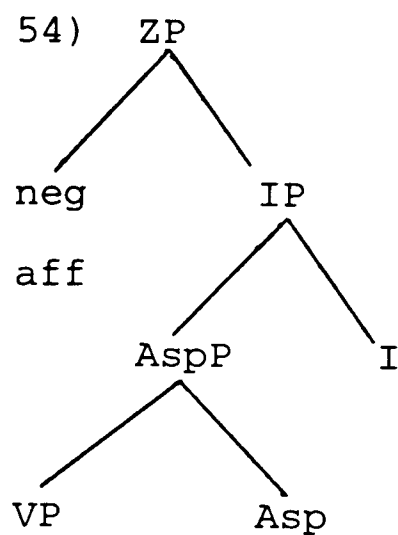
- 52) a. *etxea erori ez da
 house-the fallen not has
 "The house didn't fall down"
- b. etxea ez da erori
 house-the no has fallen

These show that, as in the Armenian examples, in Basque negation changes the word order. The auxiliary which follows the verb in affirmative constructions must now appear in a position preceding the verb. There is one difference between the data given here for Basque and the Armenian examples given in the next section. As the following example shows, in Basque the auxiliary can be separated from the main verb by other elements. In this case it has been separated by the subject.

- 53) ez da etxea erori
 not has house-the fallen

In Armenian on the other hand it is not possible to separate the auxiliary (which also bears the negative head) from the verb as will be shown in the following section.

The structure that Laka gives for focussed and negative structures in Basque is the following.



We have now seen two types of structures for negative structures. Pollock and Chomsky both assume a projection NEGP for negative elements. On the other hand Laka assumes a ZP for focussed elements and takes the negative element to be base generated in this projection. Thus, she does not assume a separate NEGP in her structure. We need to choose between the two structures for the Armenian negative constructions. We have already established that there is an FP in the Armenian clause structure which I assume corresponds to Laka's ZP. We now have to establish whether we need a NEGP in addition to the FP.

2.2. NEGATION IN ARMENIAN

Consider the following examples:

55) a. sirane ais girke kartum e
Siran this book reading is
"Siran is reading this book"

b. sirane ais girke tchi kartum²⁵
Siran this book not-is reading
"Siran isn't reading this book"

As the above examples show, the auxiliary moves to the left of the verb when it bears the negative element. As with foci, this movement is obligatory, as shown by the following example.

56) * sirane ais girke kartum tchi
Siran this book reading not-is

Thus, it seems that negation is another case which triggers the auxiliary movement. It is important to note that the negative marker is affixal, in cases where there is an auxiliary in the structure as in the above examples, the negative marker is attached to the auxiliary, and in cases where there is no auxiliary the negative affix is attached to the main verb as shown in the following example:

²⁵Notice that the negative complex in this example "tchi" (not-is) consists of the negative element (vo)tch and the 3PS auxiliary "i" or "e". The complex is also sometimes pronounced "tche".

- 57) sirane ais girke tche-kartats
Siran this book not-read
"Siran didn't read this book"

The movement which takes place in this case however, is different in nature from the movement that we have seen with foci. The important fact here is that, unlike the case with foci, in the case of negation it is not possible to separate the auxiliary carrying the negative marker from the verb. Thus, the following examples are ungrammatical:

- 58) a. * sirane tchi ais girke kartum
Siran not-is this book reading
- b. * tchi sirane ais girke kartum
Not-is Siran this book reading

This behaviour of the negative-aux is in contrast with the behaviour of the focus-aux complex which can be separated from the verb by any number of elements as shown in the following examples.

- 59) SIRANEN-e ais girke kartum
SIRAN-nom-is this book reading

Notice that the fact that the neg+aux complex cannot occur in sentence initial position contrasts sharply with the Basque data given in Laka (1990). In Basque declaratives,

as mentioned earlier, the auxiliary follows the verb and, as in Armenian, no element can intervene between the verb and the following auxiliary. In negative constructions however, as in Armenian, the negative element and the auxiliary can no longer follow the verb. In Basque the negative element and the auxiliary can however be separated from the verb by other constituents as shown in the following examples, where both structures in which the auxiliary has been moved to a position to the left of the verb are grammatical (unlike the Armenian examples).

- 60) a. * etxea erori ez da
house-the fallen no has
- b. etxea ez da erori
house-the no has fallen
"The house didn't fall down"
- c. az da etxea erori
no has house-the fallen

The reason for this difference has to do with the fact that the negative element in Basque is not an affixal element whereas in Armenian it is affixal. The auxiliary is adjoined to the negative head in FP creating the neg+aux complex. This adjunction however, does not satisfy Lasnik's Filter because the auxiliary itself is an affixal element. This means that the neg+aux complex must be adjoined to a

root element in order to be supported. I shall argue that the only root element which is available for the neg+aux complex to adjoin to is the main verb. This is the reason why it is not possible to have an element intervening between the main verb and the neg+aux complex in Armenian. The fact that the neg+aux complex acts as a prefix whereas the auxiliary alone is a suffix is surprising. I shall argue in the following sections that this has to do with the fact that negation is a prefix by nature.

I should mention here that Laka's TCC is not valid for Armenian negatives. First of all, as the examples given above indicate, the neg+aux+verb complex seems to be under the V node, and if this is true, it means that a theory should not rule out such a possibility. However, the TCC requires the Tense features to be the highest operators in the structure.

I shall use the same examples I used earlier to show that in Wh-constructions the verb is in situ, namely the indefinites test.

- 61) sirane girk tchi kartum
Siran book not-is reading

As I have shown earlier, the indefinite cannot be scrambled therefore it must be in the spec of AGROP. The fact that the verb follows the indefinite suggests that it must be in

situ.

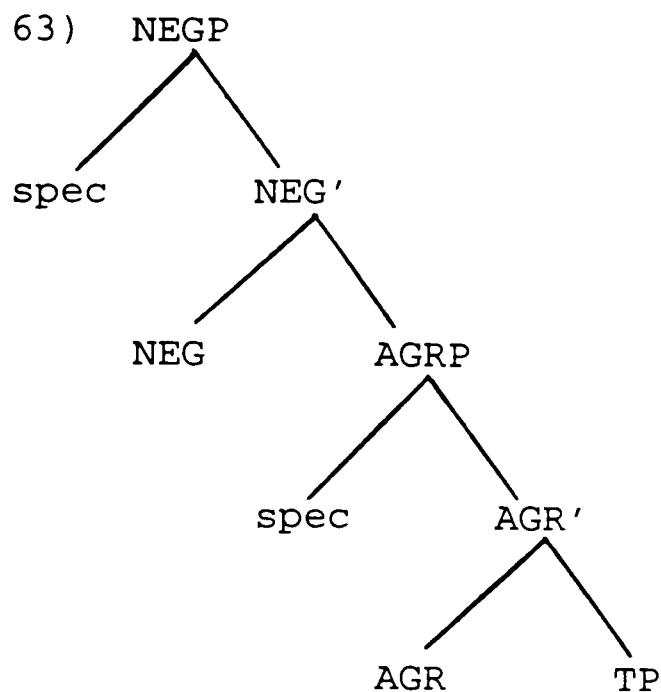
2.2.1. THE POSITION OF THE NEGATIVE ELEMENT

Let us now try and determine the position of the negative element in Armenian clause structure.

The negative "votch" in Armenian is a non-affixal negative marker which only appears in answers to yes/no questions and also as a replacement for an entire IP. Consider the following example.

- 62) sirane ais girke kardatsel e isk surike votch
Siran this book-the read is but Surik no
"Siran has read this book but Surik hasn't"

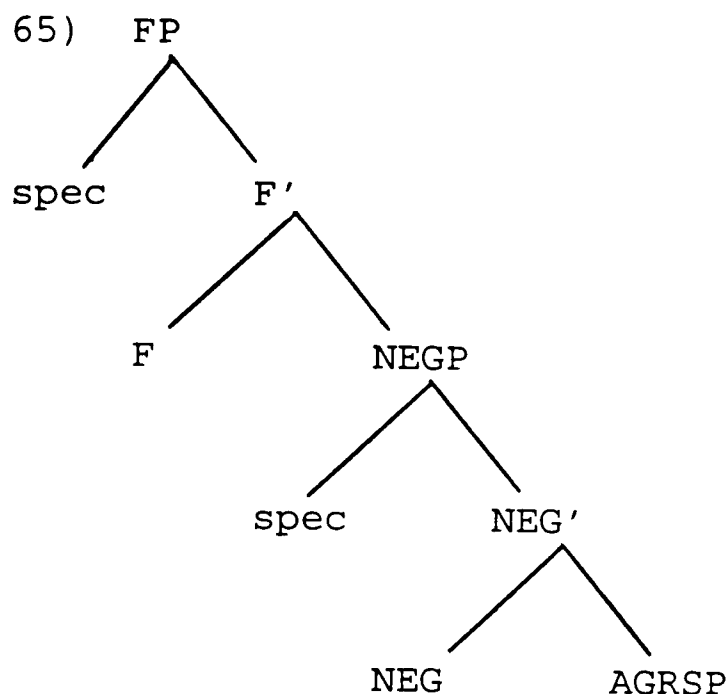
The fact that this sentence is grammatical in Armenian clearly suggests that the negative marker is in a position higher than IP. The fact that unlike in English the negative element can stand on its own without the inflexional elements attached to it shows that negation is in a position higher than IP and it does not need to pass through it in order to have scope over IP. So if we were to assume a NegP in the Armenian clause structure it would have to be higher than IP, or more precisely, it will have to be higher than both TP and AGRP. Thus the structure will look as follows:



I would like to suggest, however, that the negative element must be linked to FP (Laka's ZP), but that it is not base generated in FP. Consider the following examples.

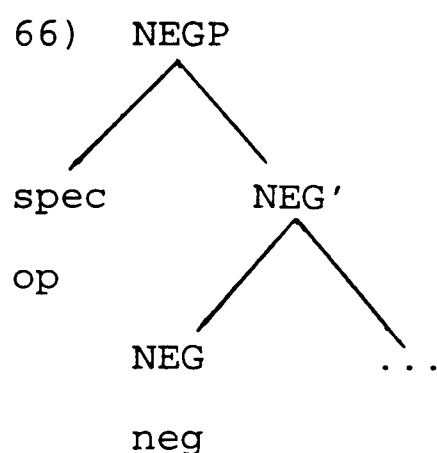
- 64) a. sirane vochvoku tchi sirum
 Siran nobody-acc not-is liking
 "Siran doesn't like anybody"
- b. votchvok siranin tchi sirum
 nobody Siran-acc not-is liking
 "Nobody likes Siran"
- c. * votchvok tchi siranin sirum
 nobody not-is Siran liking

Notice that if the negative element and the Negative Polarity Item (NPI) are both in NEGP, then the structure of the above examples will be the following.



In this structure the negative head will be in the head of NEGP, and the NPI will appear in the specifier position of this same maximal projection. This means that there is a spec-head relation between the NPI and the negative head. This configuration however, seems to be problematic. Notice that if the NPI and the negative head are in a spec-head relation, then it is not clear why the neg+aux complex adjoins to the verb and not to the NPI. As the above examples show, such a structure is totally ungrammatical. The problem is not one which cannot be resolved. In fact if we consider the analysis given in Ouhalla (1990), it will be clear that the neg+aux complex can not be adjoined to the Polarity Item at all. Ouhalla argues that languages universally have a negative operator as well as a head negative element in the NEGP. In some languages such as Standard French, both the head and the operator are realized phonetically. In languages such as English, only

the head element is realized phonetically. In languages such as Colloquial French on the other hand, only the element in the specifier of NEGP is phonetically realized. He argues that the structure of the NEGP is the following.



Thus, both the head and the spec of NEGP are filled. In languages such as standard French both positions are filled by elements with phonetic content. So in a structure such as the following "ne" appears in the head position of NEGP and "pas" in the spec of the same phrase.

67) Marie n'aime pas Jean²⁶

Based on evidence such as the following Ouhalla argues that the spec position of NEGP is occupied by a null operator which blocks antecedent government.

68) a. It is for this reason that I believe that

²⁶The fact that the neg+verb complex precedes "pas" has to do with the fact that in French AGRP is higher than NEGP and the neg+verb complex moves further up from NEGP.

John was fired.

b. It is for this reason that I don't believe that John was fired.

In the first example the adjunct "for this reason" can be associated with the embedded clause. Ouhalla follows Rizzi (1990) and argues that in this case, there is an element in the spec of NEGP which blocks the association between the adverbial and the embedded clause. However he differs from Rizzi in not assuming that the element in the spec position is the negative element itself. Instead Ouhalla suggests that the element in the spec position is a null operator, maintaining the idea that the phonetically realized negative element is a head because, he argues, the only category which may block verb movement in the following structure is a head category.

69) * John likes not Bill

Let us now try and see if the same facts holds in Armenian. In this language the phonetically realized negative element is clearly a head, because it adjoins to the auxiliary and the verb. It is also clear that this is the element used for sentential negation because it takes scope over universal quantifiers as in the following example.

- 70) bolore tchen jekel
all not-are come
"not all have come"

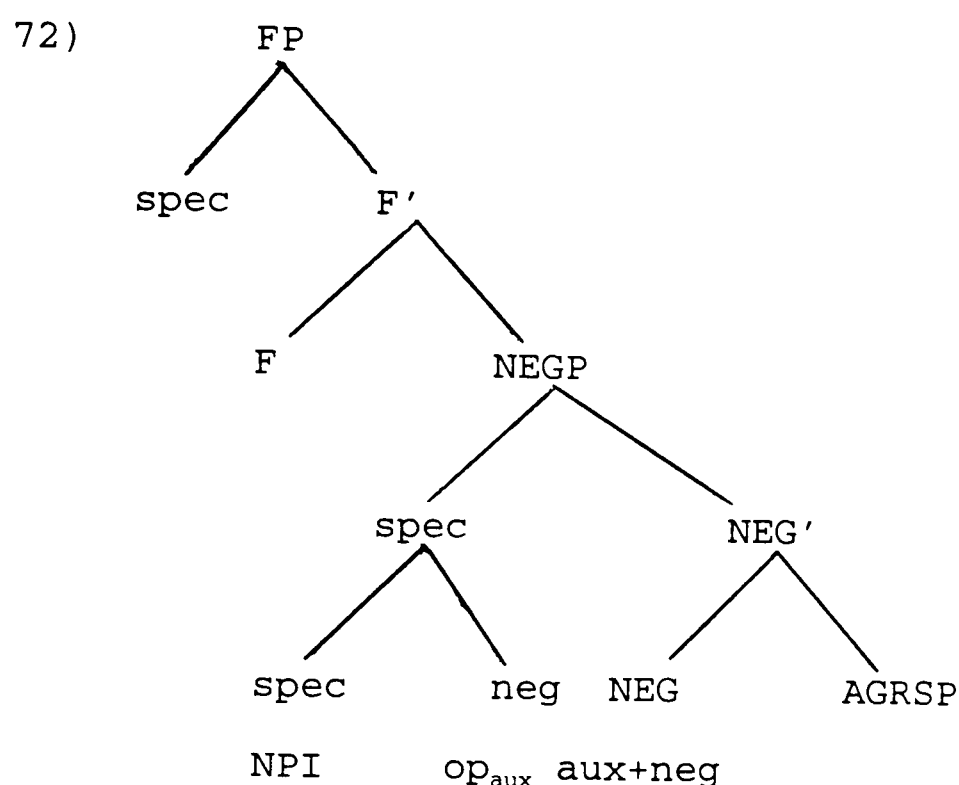
As the gloss shows negation in this example has wider scope than the universal quantifier. The above example cannot mean "all of them are such that they did not come".

So, the negative morpheme used for sentential negation is a head. On the other hand adjunct movement is blocked by sentential negation as shown in the following examples.

- 71) a. inchpes es uzum ais gerkere bazhanel
how are wanting this books distribute
"How do you want to distribute these books"
- b. *inchpes tches uzum ais gerkere bazhanel
how not-are wanting this books distribute

Thus, negation seems to block movement of the adjunct from the embedded infinitival clause. The second example given above is ungrammatical when the Wh-phrase is taken to have scope over the embedded clause. Ouhalla argues that this is due to Relativized Minimality (Rizzi 1990). The null operator in the spec of NEGP is a potential antecedent governor for the trace of the adjunct Wh-phrase and thus it blocks the antecedent government of the trace by the Wh-phrase in the matrix FP. This suggests that the structure

given in (65) should be modified as follows.

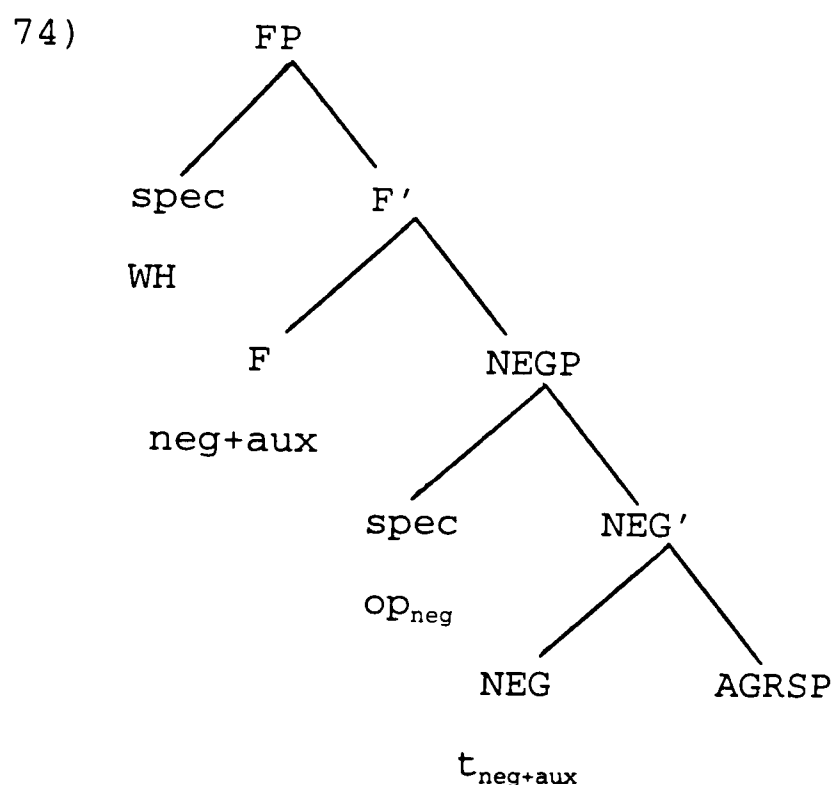


In this structure the negative operator is the head of the Spec, NegP; therefore the auxiliary cannot be realized on the NPI, which is not the head of the spec of NEGP and therefore not available for adjunction. Thus, the neg+aux complex can never be expected to adjoin to the NPI. Notice that the negative operator is not a lexical element, therefore neg+aux cannot adjoin to this element either, so the only other option is to adjoin to the verb, which is in fact what happens. However, if the negative element appears in FP, which it does for scope reasons and because of the fact that negation has the +f feature, then it must be possible for it to adjoin to the focussed elements in the spec of FP. This however, is not the case as the following examples show.

73) a. ov ais patmutjune tchi sirum
 who this story not-is liking
 "Who doesn't like this story"

b. * ov tchi ais patmutjune sirum
 who not-is this story liking

If the following is the structure for the above examples it is not at all clear why neg+aux cannot be adjoined to the element in the spec of FP, namely the Wh-phrase.



As the position of elements in the above structure shows, the neg+aux complex in FP can in principle be adjoined to the element in the spec of FP which is the Wh-phrase and as the evidence from non-negative examples show it is a legitimate element for the auxiliary to attach to.

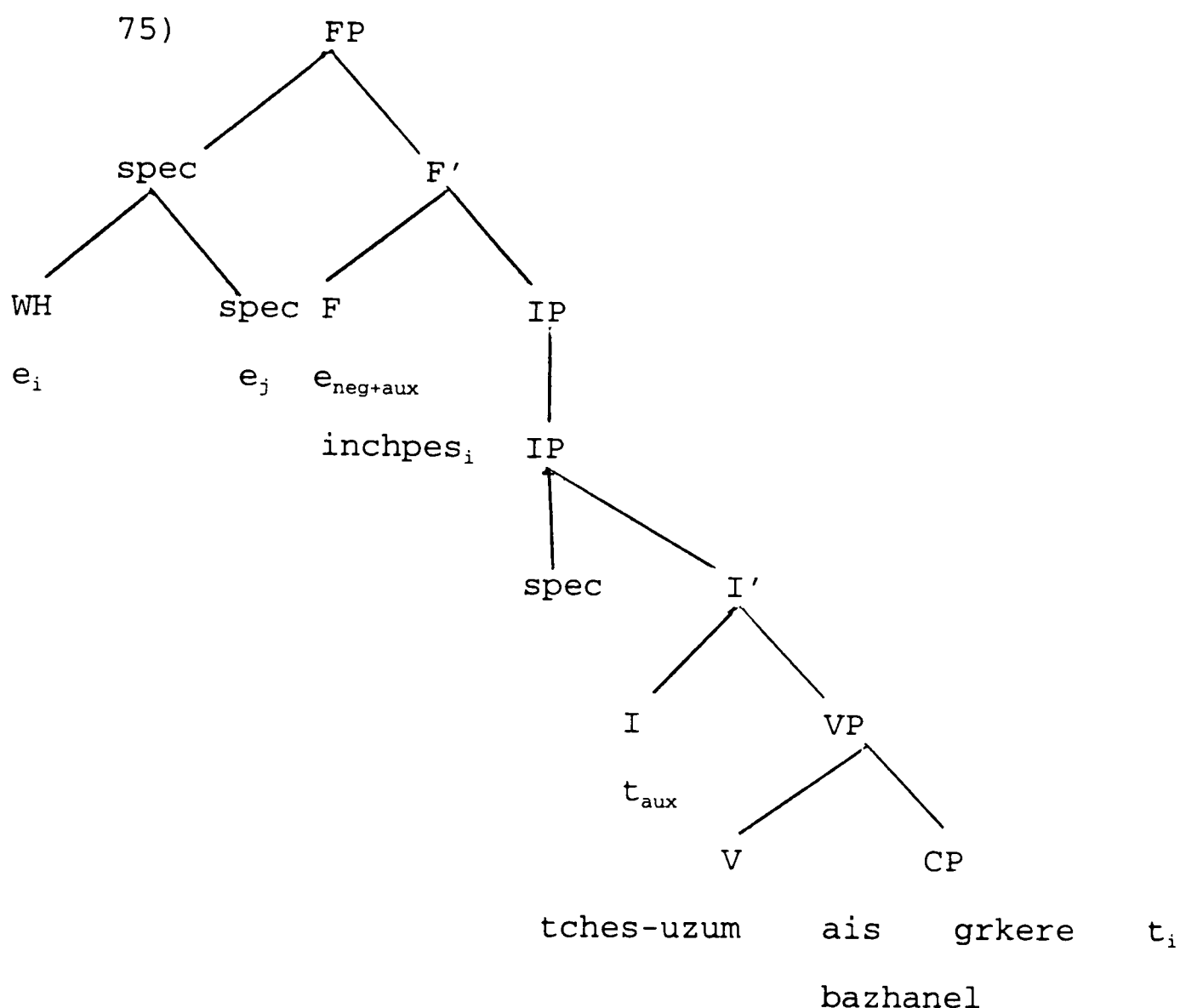
One possible explanation for this could be that there is an element intervening between the Wh-phrase and the auxiliary in FP which makes the adjunction of neg+aux onto the Wh-phrase impossible (I shall argue later that this is not the case). The only element which can be in such a position is the abstract negative operator. Notice however that if we say that the abstract operator is in FP and is always the head of the spec FP, and that negation has the +f feature (it is focussed), there will be no need for postulating a NEGP in the structure as well as an FP. Negation could be taken as being base generated in FP. In other words, if the negative head and the negative operator must always be in FP together, and the operator must always be the head of spec FP, then it could be the case that they are both base generated in this position. The same locality effects will also hold even without postulating a NEGP in the clause structure. Let us see how. Consider again the example given in (71b) which has been repeated here.

75) *inchpes tches uzum ais gerkere bazhanel

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As mentioned earlier, it is argued in Ouhalla (1990) that the ungrammaticality of such examples is due to the fact that the negative operator in NEGP, being a potential governor for the trace of the adjunct Wh-phrase, blocks the antecedent government because of Relativized Minimality.

Suppose now, that negation is base generated in FP. The structure for the above example will then look like the following (irrelevant details omitted).



In this structure, neg+aux is abstractly represented in FP (ie. it is linked to an empty operator in FP through a chain). The actual neg+aux complex appears under V adjoined to the matrix verb. The head of the spec FP is filled by the abstract negative operator and the Wh-phrase is adjoined to the spec FP. As discussed in detail in chapter 2, antecedent government from this position is not possible because of the fact that the index of F does not match the

index of the Wh-phrase. In this way the abstract negative operator will block antecedent government even if it is base generated in FP rather than NEGP. However, if there is a NEGP in the structure, the abstract neg operator must be base generated in the spec of this position. And if this is the case there is no motivation for it to move higher up to FP. The .NEG Criterion will be satisfied in NEGP, and the scope of negation will be determined by the head association between NEG and F which is needed anyway (as will become clear in the next section). Thus, there seems to be no evidence so far for having a NEGP as well as an FP in Armenian clause structure (but see later sections).

2.2.2. NEGATION, THE AUXILIARY AND THE MAIN VERB

Dahl (1979) divides languages into three groups with respect to the way they express negation. The first group uses the negative element as a morphological element which appears on verbs. In the second group negation is expressed by means of an auxiliary verb, and the third group uses negation as an adverbial element. Armenian belongs to the first group of languages. That is, the negative element is an affixal element which attaches to the verb. Let us first consider a case where there is no auxiliary in the structure. In this case the negative marker is always prefixed onto the verb. Consider the following example:

- 77) a. sirane dure batsets
 Siran door-the opened
 "Siran opened the door"
- b. sirane dure tche-batsets
 Siran door-the not-opened
 "Siran didn't open the door"

It might seem that such a case is quite straightforward to analyse in Laka's framework; the verb moves to T, AGR and F and gets all the affixes in those positions. Notice however, that the negative element is a prefix whereas the inflectional morphemes are suffixes.

In cases where there is an auxiliary, the derivation seems to be more complicated. The negative marker appears on the auxiliary which unlike in declaratives, precedes the main verb. Notice that this "movement" of the auxiliary is not the same kind of movement that takes place in Basque as discussed in Laka. In Basque the negative auxiliary moves to a position preceding all the arguments in the clause, but this kind of movement is impossible in Armenian. The neg+auxiliary complex can only occur in a position adjacent to the verb as shown in examples given in chapter 1, repeated here for ease of reference. Compare the following examples.

78) ez da etxea erori (Basque)
no has house-the fallen
"The house didn't fall"

79) a. * sirane tchi ais girke kartum
Siran not-is this book reading

b. * tchi sirane ais girke kartum
Not-is Siran this book reading

This suggests that the neg+aux complex does not stand on its own even when the two occur together as a complex. They still need to be affixed onto the verb. However, because of the fact that the negative element is a prefix by nature, the neg+aux get affixed to the left of the verb. Notice that unlike in non-negative constructions, in the negative cases the auxiliary can only be suffixed to the verb and not to the Wh-phrase as shown in the following example.

80) ov girke tchi berel
who book-the not-is brought
"Who has not brought his/her book"

Given the analysis presented above about the negative head and operator in FP this result is not unexpected. The fact that the head of the spec of FP is filled by the negative operator means that the auxiliary cannot attach to the Wh-phrase. As argued in detail in chapter 2, the auxiliary can

only attach to the element which appears as the head of the spec FP.

2.2.3. THE STATUS OF THE NEGATIVE MORPHEME

Consider the following example with a negated verb.

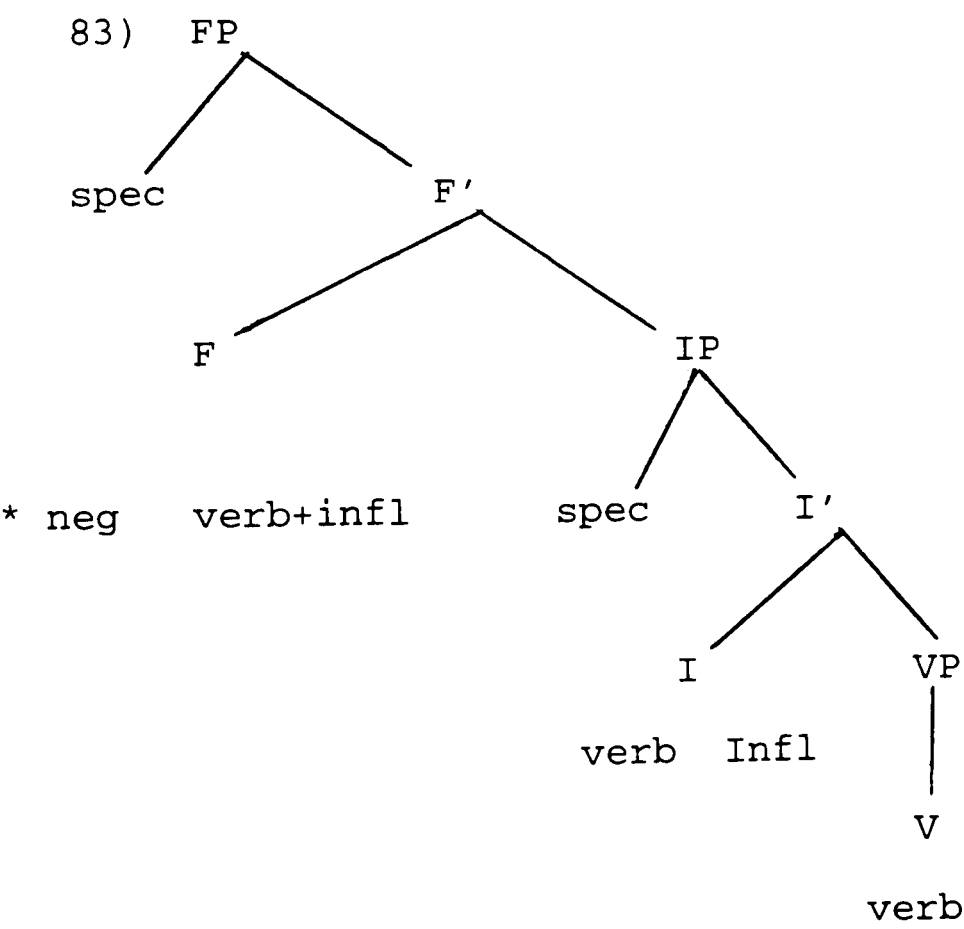
- 81) sirane tche-gena-ts
Siran not-go-3sp

The negative element in this example precedes the verb, and the tense and agreement features are realized as a suffix. Notice however, that in cases where there is an auxiliary the order of the three is different. Consider the following example:

- 82) sirane tchi genum
Siran not-is going

In this case, the auxiliary appears in between negation and the verb. If the case with the auxiliary is derived through head to head "movement" of the verb, then the difference in the ordering of elements is not expected. The same process should not create two different structures. Furthermore, if the verb is associated with all the heads in the same way, then according to Kayne (1993) the negative morpheme cannot appear preceding the main verb.

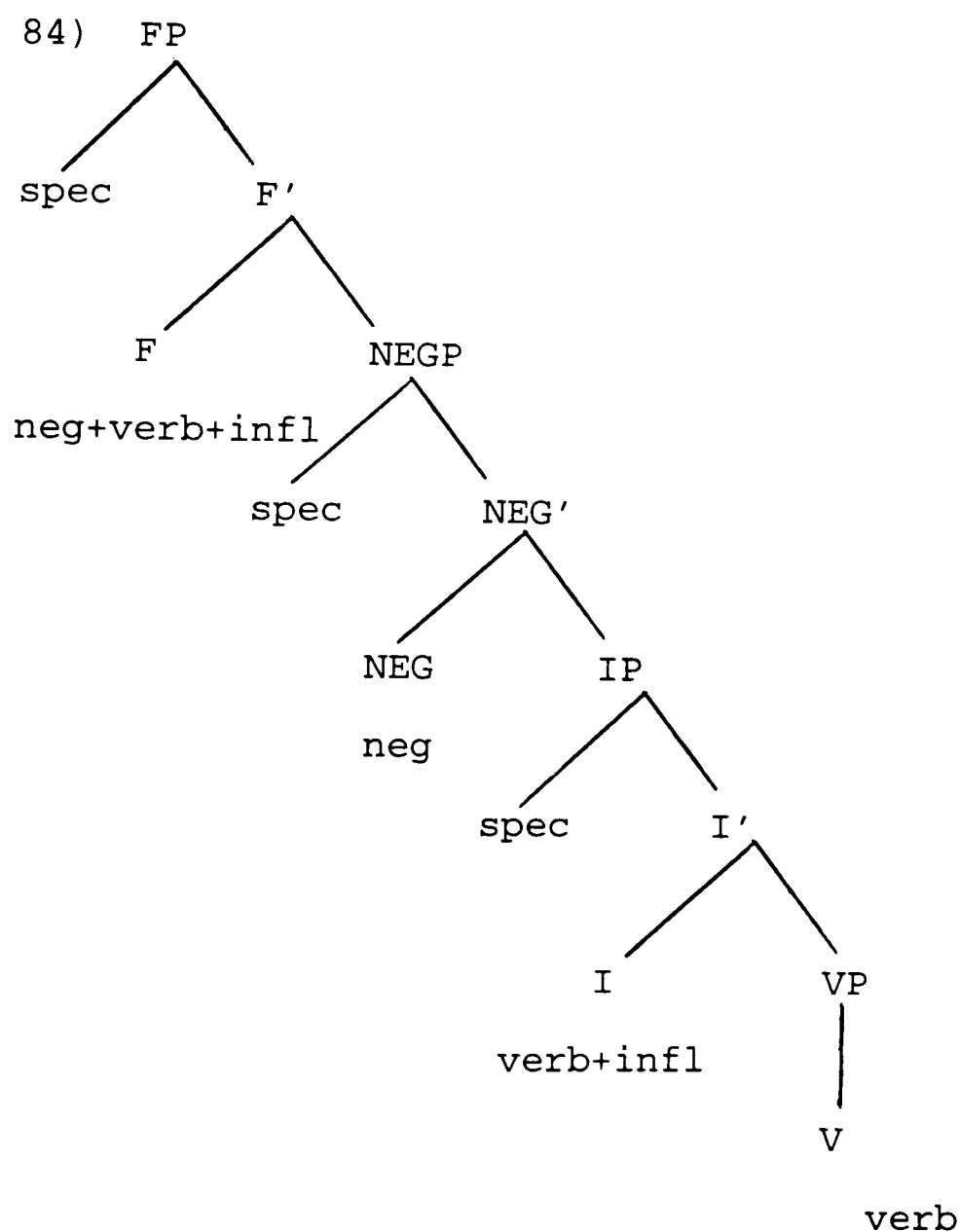
Kayne (1993) argues that all adjunctions are left adjunctions. In other words, he argues that elements only adjoin to the left of a given head. In the examples that we have however, assuming that negation is base generated in FP, we are forced to say that the auxiliary which is base generated in a lower position is right adjoined to the negative element in F⁰P. If we were to adopt Kayne's theory, it is clear that the order we would get would be different from the one that we actually have as shown in the following structure.



The same will also be true if there is an auxiliary in the structure given above. The auxiliary will have to be adjoined to the negative element in F and therefore we

should get the order aux-neg, which is the reverse of what we actually have. Thus, with the given structure it seems to be impossible to get the correct order in Kayne's framework.

Let us now assume that there is a NegP in the structure in between IP and FP. The structure will then be:



With this structure also we seem to get into an impossible situation. It still seems to be the case that the elements will be in an order which is not the one that we need. In

this structure, the verb will still have to be the leftmost element and the negative element the rightmost one and as we have seen this order results in an ungrammatical structure. However, in what follows, I shall argue that with this structure it is possible to get the correct order provided that the elements violate the HMC. That is, if certain elements skip certain heads, with a NEGP in the structure, it will be possible to get the order (neg+aux+verb) or (neg+verb+Infl).

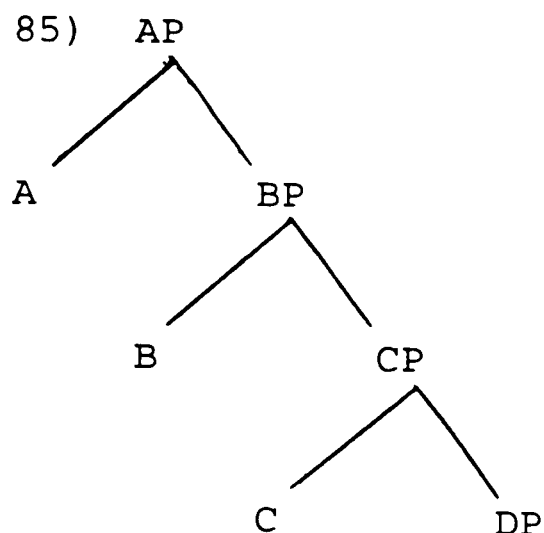
2.2.4. THE NEG+AUX+V ORDER

In this section I shall consider the adjunction structure of the negative element, the auxiliary and the verb. First I shall discuss cases where the negated element is the verb and there is no auxiliary, and then I shall consider cases where there is an auxiliary in the structure. In cases with the auxiliary, it is always the auxiliary which follows the negative affix.

Kayne's (1993) claim that adjunction is always to the left means that in principle, when a head is associated with head positions in a tree adjoining to a number of heads in an ordered way, the lowest element will be the leftmost one in the adjunction structure. In other words, if in a head chain each head is associated with the immediately higher head, the lowest head will be the leftmost one in overt syntax. So if heads must always be

associated with the immediately higher head (as required by the HMC), and cannot skip intermediate heads on their way to a higher position, then we expect the order of the adjoined elements in the final complex to correspond to their position in the tree. This prediction however, is not always borne out. The neg+aux+verb complex in Armenian is one case where this prediction seems to fail, given that negation is generated in a position higher than IP and VP (as argued in section 2.2.1). I shall argue here, that the fact that the order of elements in Armenian negative structures does not correspond superficially to the order predicted by Kayne's theory, is not a serious problem and it is possible to obtain such an order without violating any grammatical principles.

I shall argue that the fact that all adjunction is to the left together with the assumption that heads can skip certain positions when associated with higher heads will provide the correct predictions for the Armenian data. That is, if elements do not "move" step-by-step but the created structure is grammatical with no ECP violations, then it will be possible to get orders different from the strict order mentioned above. Consider the following abstract structure:



Note that the letters used here are simply variables and do not correspond to any grammatical categories which might be identified by any of the letters in this tree. In this structure, suppose that the element under C is directly associated with A crossing B. In this case, C will left adjoin to A and we shall get the complex C+A. If B then also gets associated with A, it will have to adjoin to the complex C+A formed by the association between C and A. Considering the fact that B must left adjoin to the complex we shall get the order B+C+A. On the other hand, if C is linked step-by-step to A, the order of the elements in the complex will not be the same. A step-by-step link from C to A through B will result in the order C+B+A.

Chomsky (1986) argues that the HMC can be dispensed with because the basic idea behind postulating the HMC is to avoid ECP violations. Heads are never assigned a theta role, therefore they can never be theta governed. So the head of the chain can only antecedent govern its trace, and

crossing a head in the course of linking to the higher position will block antecedent government, causing a violation of the ECP. Supposing that we could find other ways of satisfying the ECP it should, in principle, be possible to violate the HMC without causing ungrammaticality.²⁷

Let us now see what process could give us the order neg+aux+verb. This order indicates that the auxiliary and negation must both adjoin to the verb in a position higher than their base generated positions. To obtain this order, the verb must be in a position higher than IP and NEGP. Let us assume that the verb is in FP. The fact that the auxiliary and the negative affix are to the left of the head verb in this complex suggests that the verb has been associated with FP without being linked to the inflexional heads and NEGP. This would mean that the verb must cross VP, AGROP, TP, AGRSP and NEGP. But can the verb antecedent govern its trace if it crosses so many heads? In what follows, I shall argue that it does.

The analysis I propose here is in no way in conflict with any of the locality theories. Suppose that we have a complex chain consisting of a number of chains as in the following:

²⁷Ouhalla (1989a) deals with clitic movement and reaches similar conclusion but his analysis is different from that given in the following pages.

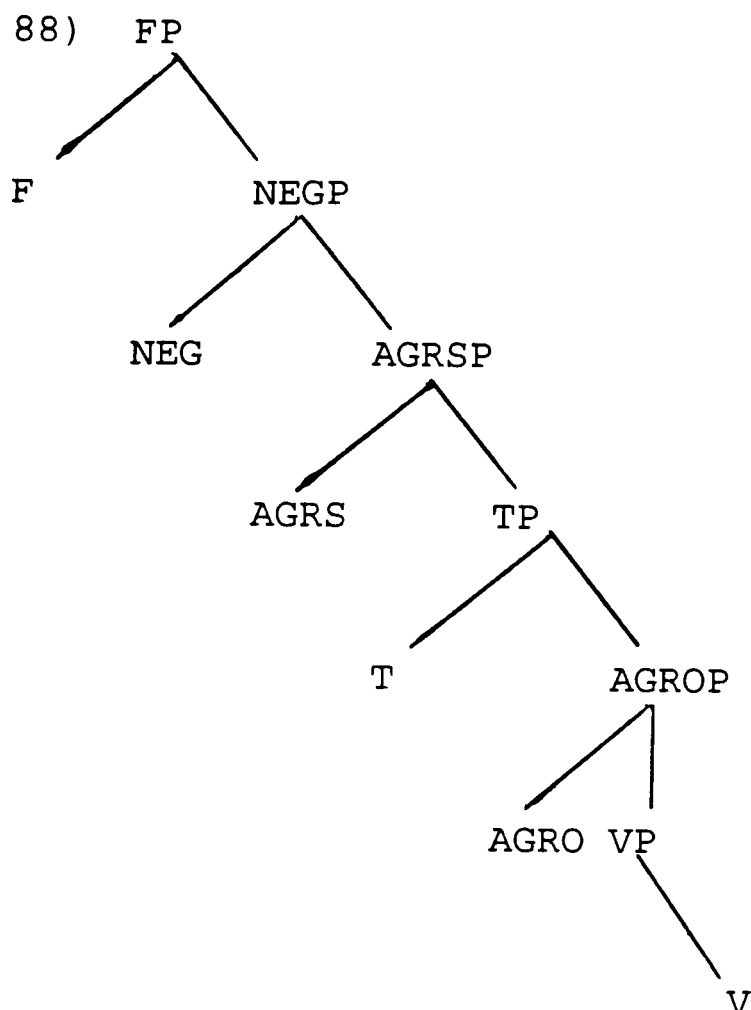
86) (A(a...b),B(a'...b'),C(a''...b''))

This chain consists of three members each of which is itself a chain. Notice that in principle the formation of such a chain in the theory must be allowed. In fact when a clitic attaches to an inflected verb, the chain includes the verb+clitic complex and the trace of the clitic. The inflected verb however is itself formed through the link between the verb, TP and AGRPs which means that the clitic has in fact adjoined to a chain including the verb, tense and agreement.

Suppose now that all the sub-chains in the complex chain are headed by elements which appear in the same position. For example, all elements are affixes adjoining to the same head (see below). This would mean that as long as there is no ungoverned link in the complex chain the result will be grammatical. Let us consider an example, specifically the problematic case of the negated verb in Armenian.

87) pro zange tch-les-ets-ink
pro bell-the not-hear-past-3p
"We didn't hear the bell"

The relevant (LF) structure for this example is given below.



Suppose that in this structure the verb is abstractly linked to AGROP, TP and AGRSP, and then directly to FP skipping NEGP. Negation on the other hand is a +f element therefore it is linked to FP independently. In a movement analysis if the verb moves to FP before the negative element, then the negative element will have to left adjoin to the verb and we shall get the correct order. In the LLF framework however, where the elements are all inserted into the tree instantanieously, both orders verb+neg and neg+verb should in principle be possible. Because of the fact that there are no movements involved, there cannot be earlier or later movements, therefore any adjunction order should in principle be possible in a head position with more than one element in it. It seems that in such cases it

is the nature of the affix (whether it is a prefix or a suffix) which determines its position with respect to the head onto which it is adjoined. Thus, in the above structure we have two separate chains involved: the verb chain (V+AGRO+T+AGRS+F) and the negative chain (NEG, F). Here I have indicated the positions involved in the chains rather than the elements themselves. The structure of the two chains indicates that the two end up in the same position and adjoin to the same head. Considering the fact that the two chains share the same head position, we can conclude that they share some sort of an index. I shall assume (following Manzini (1992)), that all lexical elements in the structure must have an index. Let us see what the nature of this index could be.

2.2.5. CATEGORIAL INDEXING AND HEAD MOVEMENT

Here, I shall make use of the notion of categorial index and the indexing system used in Manzini (1992), although in some respects the indexing system which I propose here is different from the system used in the Locality theory. Manzini defines Categorical index as:

89) an index i is licensed as the categorial index of $@$ iff $@$ is lexical.

Thus, lexical elements all have a categorial index. We also need the definition of address in Manzini (1992)

90) (J,i) is licensed as the address of $@$ iff $@=@_i$ and there is a $B=B_J$ such that $@$ is made visible by B , where $J=j$ (j the categorial index of B), or $J=(k,j)$ ((k,j) the address of B)

A sequence then is defined as:

91) (a_1, \dots, a_n) is a sequence iff a_i c-commands and has an index compatible with a_{i+1} , and every index is licensed in the sequence.

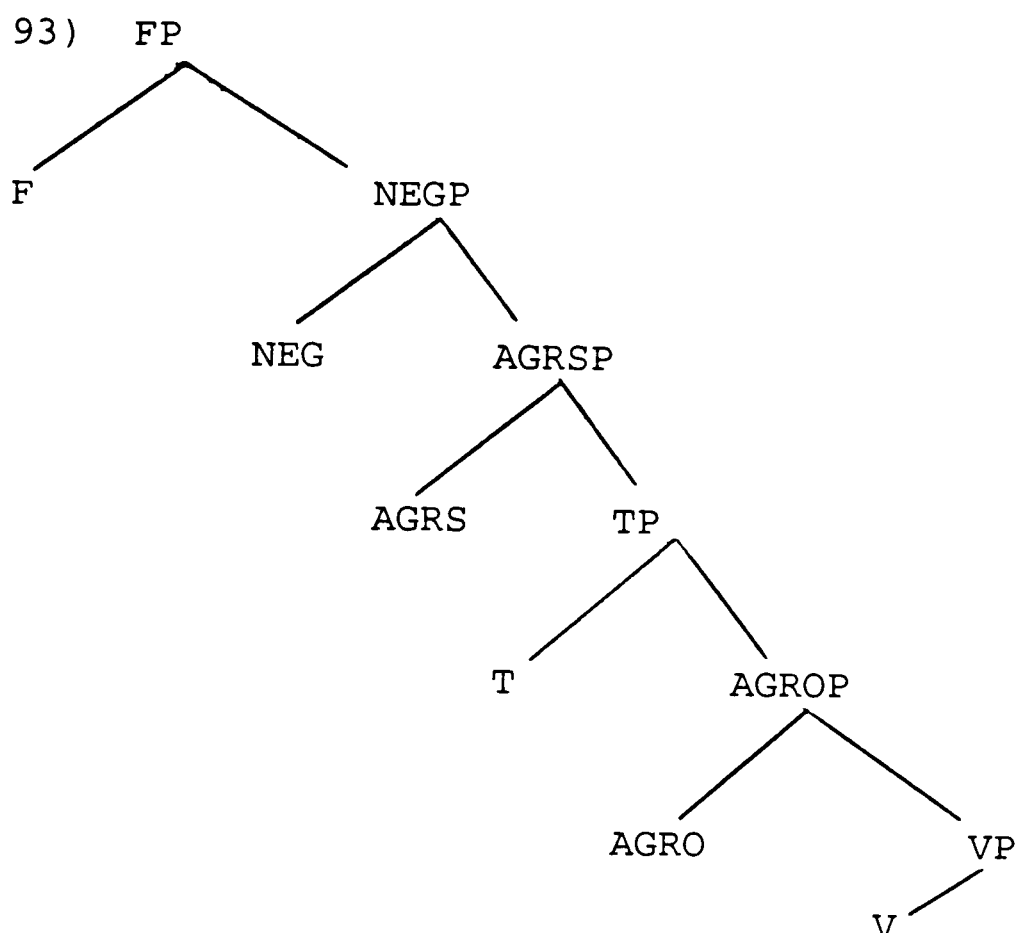
Compatibility is defined as follows:

92) index i is compatible with index j iff j includes i .

Elements are made visible in two ways. Maximal projections are made visible through case marking and heads are made visible through incorporation (in the sense of Baker (1988)) ie. adjunction of a head to another head. The case we are dealing with is the case of head movement and therefore we are concerned with the second type of addressing, that is head to head adjunction. So if a lexical element such as the verb becomes linked to other head positions and adjoins to other heads, the categorial index of the elements in the adjunction will then be shared by the two.

In the above structure, the verb which has a categorial index is abstractly associated with AGRO, T, and AGRS. This means that all three positions get an address by the verb and they all share the index of the verb. In other words the verb is associated with the heads AGRO, T and AGRS by forming an abstract link with these heads. From AGRS, the verbal complex is directly linked to FP crossing NEGP. The negative element is also associated with FP independently, because of the fact that it has the feature +f. In FP negation also gets an index from the verb which is the head of the incorporated structure²⁸. Notice that in such a configuration all the links of the two chains, namely the verbal chain and the negation chain, share one index; the complex index. This means that all the positions have compatible indices, and because of this fact, every link in the chain is governed by the one immediately above it, irrespective of the whether the higher link is part of the same chain or not. That is, every link is C-commanded by a head which has a compatible index. Thus, even though the elements are not linked to one another step-by step, all the links in the two chains are governed and the structure is correctly predicted to be grammatical. Let us consider the relevant structure.

²⁸ This clearly contrasts with the idea of addressing elements put forward in Manzini (1992). In the Locality theory addressing is never possible in an A' position. However, I am assuming here that elements which incorporate, that is, appear in the same head position, share their indices and therefore have a complex index in the same way that addressing in the Locality theory creates complex indices.



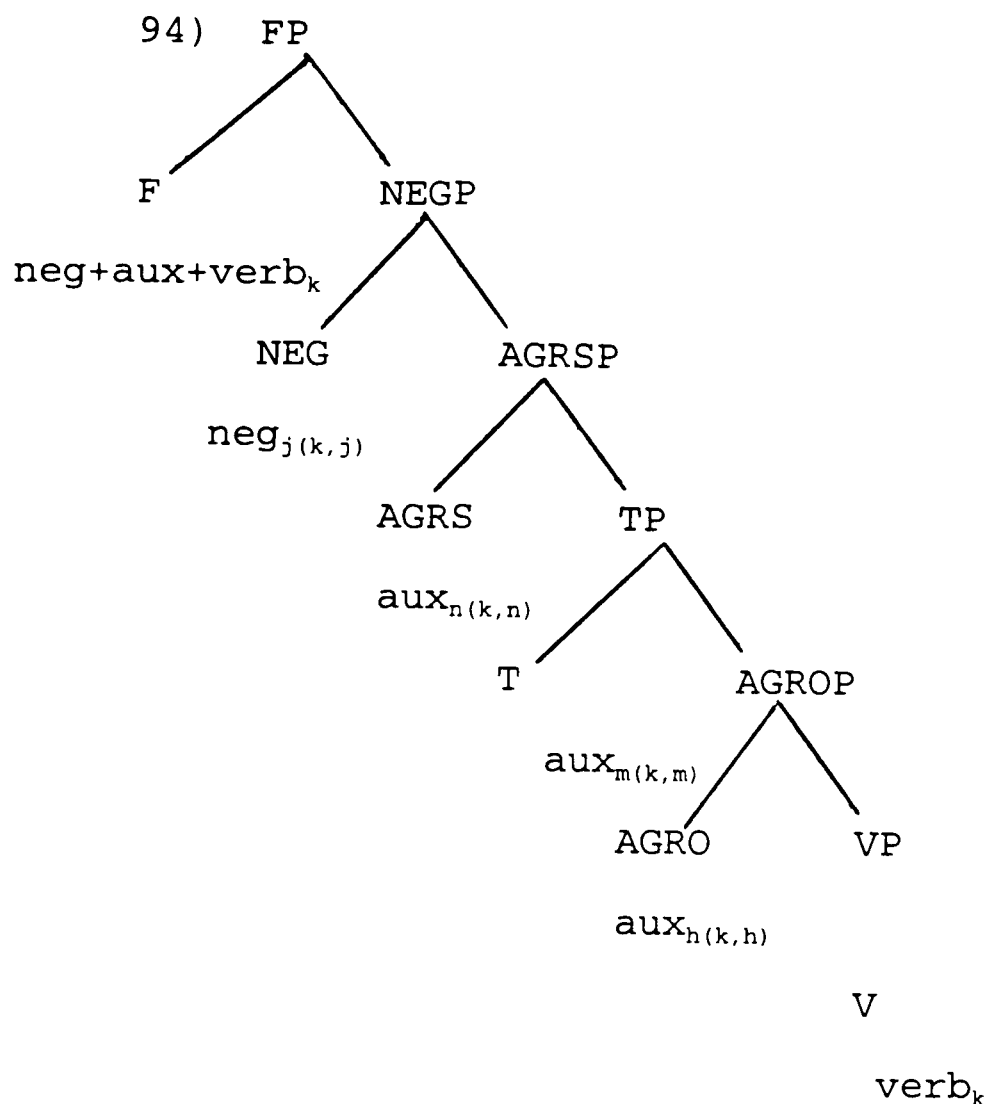
In this structure the verb is associated with AGRO, T and AGRS to get the inflexional elements and it transmits its index to these three positions to form the address. So assuming the verb to have the index "i" and AGRO the index "j", when the verb gets associated with AGRO and an incorporation structure results, the index (or the address) that is created from this is: (i,j). In T (with index "k") the address that the verb gives to the head is (i,k). Similarly, when there is a relation between this complex and AGRSP (with index "m") the address is: (i,m). From this point, the verbal complex is directly associated with F. On the other hand, the negative element also gets associated with F because it is +f. Thus, there is an adjunction structure under F, namely between the verbal complex and the negative element. Assuming that the negative element

has the index "n", the resulting index will then be: (i,n). Thus, because of the fact that all the elements end up in the same head position, namely F, they all share their indices. In other words, because of the fact that all chains are headed by an element in the F position, they all inherit the index of the complex element in F. Assuming that it is the chain which gets an address and not a single element, the final index will be shared by all the sub-chains involved in the complex. This means that what we have is a legitimate sequence from V to F and government is satisfied without the need for elements to appear in a strict head to head sequence. All the links in the chains have the index "i", which is the index of the verb, in common. Notice that I am assuming that incorporation is necessary for the indices to be transmitted to a higher position in the structure. Thus, I am using the addressing system in a case of head chains which is not the type of indexing used for head chains in Manzini (1992). However, the fact that there is incorporation and all the elements involved end up in a single adjunction structure justifies this approach.

Now let us look at the case with the auxiliary. As mentioned earlier the order in this case is neg+aux+verb. Because of the presence of the auxiliary, the verb is not associated with the AGR and T positions directly. It has already been argued that the auxiliary is an affixal element. On the other hand, it has also been argued that

when there is an element in FP the auxiliary must form a chain, the head of which is in F, in order to satisfy the Focus Criterion. We know that negation is a focussed element and must therefore appear in F. Thus, negation also forms a chain the head of which is in F. The auxiliary is in fact a lexical element and it is associated with the AGRO, T and AGRS positions. However, being affixal, the auxiliary is also dependent on a lexical element. The only lexical element which is available to the auxiliary chain in this case is the verb, because there is no lexical element in the spec of FP. Notice that the auxiliary does have a lexical index. It behaves like clitics which are considered to be lexical (Ouhalla 1990), but they still have to attach to another lexical element.

Thus, the auxiliary is associated with the inflexional heads, and therefore these positions are addressed. It then gets associated with F. The verb is directly associated with F, and negation is also directly associated with F. Let us see if government holds for all the links in a case like this. The structure is the following.



As the structure shows, all elements end up in the F position, and again they all share the k index in their address. Thus, all the chains involved will automatically get to share this index, because they all have one member in the complex. This will give us a chain from V to F with links which all have compatible indices. All links in the chains share the index of the verb, and therefore government will hold with all the links irrespective of the fact that they belong to different chains. Thus, as in the earlier case, elements can be associated with a position higher than the immediate head position. As the structure shows, the verb has crossed four heads without a violation of the ECP.

Having established that this is the correct structure for negative clauses, we still need to answer the question of why it is not possible for the negative auxiliary to attach to a focussed element in the structure. Notice that in a structure with a NEGP, the negative operator will no longer be in the head of the spec FP, therefore it should be possible to have the same order as in the case of the non-negated auxiliary, namely Focus+aux. I would like to suggest that the answer has to do with the fact that the negative element is a prefix.

CONCLUSIONS

Finally, I shall summarize the main conclusions reached in this thesis.

First, I argued that focus and Wh-movement are cases of the same syntactic process and they both trigger auxiliary movement. The nature of the auxiliary movement suggests that a single syntactic level theory (ie. Brody 1992) is the best way to analyze the data. It was shown that the auxiliary is an affixal element which attaches to the verb in declaratives, and to the focussed (interrogative and non-interrogative) phrases in focussed constructions. It was argued further that the focussed phrase which bears the auxiliary is in situ (or more precisely, in its case checking position). Then, following Kayne (1993) a uniformly head initial structure was argued for with respect to functional projections and the VP.

An analysis was then given for multiple Wh-constructions. It was argued that Armenian can be classified as -MFS in Rudin's classification system. As a -MFS language Armenian has certain Wh-phrases (those not bearing the auxiliary) adjoined to IP (or AGRSP). It was argued that although the Wh-phrase bearing the auxiliary is inside IP, the others are adjoined to it. It was shown that Wh-phrases are ambiguous in Armenian as in Chinese where they can be used either as indefinites or as

interrogatives. It was then argued that in Armenian, Wh-phrases need to be licensed as foci in order to get interrogative force. This licensing is done by the head F of FP. Thus, the Wh-phrases which do not have the auxiliary attached to them, have to be adjoined to IP to be governed and licensed by F. It was also suggested that partial Wh-movement is a result of this licensing requirement.

It was then shown that indefinites and negation also trigger auxiliary movement. The nature of this movement is not the same as the one triggered by foci however. With indefinites it was argued that the movement of the auxiliary takes place because of the fact that the indefinite, while in AGROP, must escape the case checking process and this is done by the incorporation of the auxiliary to the indefinite. It was argued that negation is a head associated with its own maximal projection NEGP which appears between AGRSP and FP in the structure. Negation is an affixal head incorporated onto the auxiliary which in turn attaches to the main verb. The reason for the neg+aux complex being attached to the left of the verb has to do with the fact that the neg element is a prefix by nature. To ensure this order, all three elements (the verb, the auxiliary and the neg element) "move" to F separately and independently of each other. Thus, it is not the case that the verb "moves" from V to F step-by-step and picking up the affixes which, given Kayne's left adjunction theory, would give the wrong order.

APPENDIX

In this appendix, I have given a list of all the paradigms of the case and inflexion features that I have used throughout the thesis.

Nominal inflexions

girk-e	book-nom
gerk-i	book-gen
gerk-in/girk-e	book-acc
gerk-its	book-abletive
gerk-ov	book-instrumental
gerk-um/gerki metch	book-locative

Inflected Wh-phrases

"Who"		"What"	
ov	nom	* inche/inch	nom
um	gen	inchi	gen
ume	acc	inche	acc
umnits	abl	inchits	abl
umnov	instr	inchov	instr
um metch	loc	inchi metch	loc

"be" Auxiliary

Present

em	1s	enk	1pl
es	2s	ek	2pl
e	3s	en	3pl

Past

ei	1s	eink	1pl
eir	2s	eik	2pl
er	3s	ein	3pl

Negated "be" auxiliary

Present

tchem	1s	tchenk	1pl
tches	2s	tchek	2pl
tchi/tche	3s	tchen	3pl

Past

tchei	1s	tcheink	1pl
tcheir	2s	tcheik	2pl
tcher	3s	tchein	3pl

* inch=indefinite, inche=definite

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